

# Portfolio Architecture

BTAR3018 DESIGN STUDIO V  
Y3S1

1. Urban Intervention : Urban folly, Cerita Payang
2. Precedent Studies : Mt Fuji World Heritage Centre
3. Visitor Centre : KT Boat Activities Visitor Centre

**Rex Tai**  
20WVR08685



“Hi,  
I’m  
Rex  
Tai”



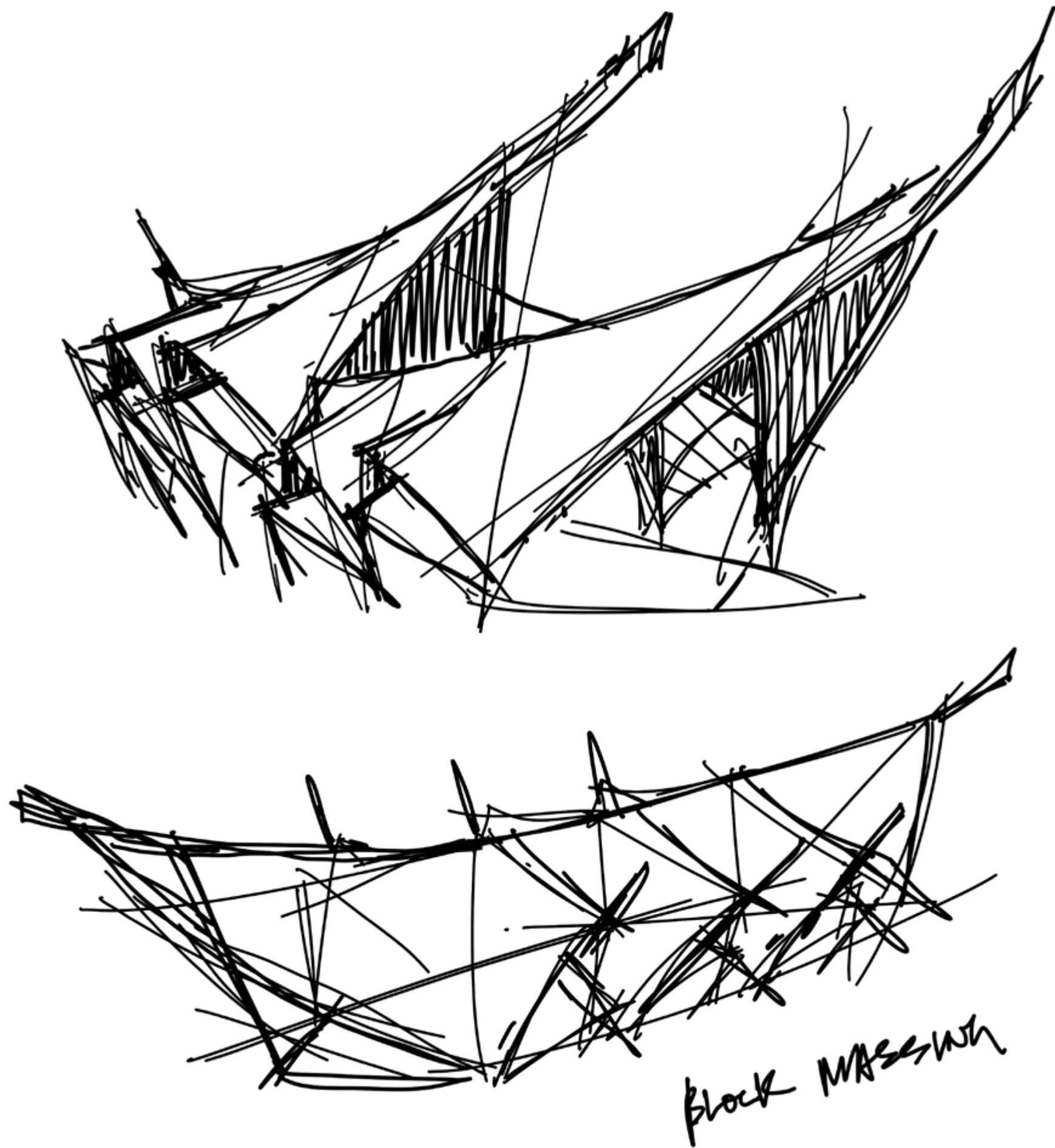
Hi, glad to be preparing this portfolio again for the third time in my bachelors. I hope I am still able to do that for the last time during my final semester in January 2022.

This semester I would say it's another league compared to the previous semester. Things are getting really tough and luckily I made it through again.

I am quite happy to say I made a breakthrough on my design forms for being expressive, however I am still weak in my space plannings, as it does not resonate from my form. Anyways, it's still a learning process I need to go through. I will surely be better than this time next semester.

There are some new lecturers as well as the same ones. The new ones are Ar.Toong and Mr Megat; Cikgu Fadzil and Ar. Julius is still with us. Special thanks to them for getting through this semester with us.

19/9/2021



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Visitor Centre :  
KT Boat Activities Visitor Centre



# Project 1

## Urban Intervention: Urban Folly, Cerita Payang

This project is an Urban Intervention with the chosen zones along the visitor centre site in Kuala Terengganu. The zone chosen was zone 6 along Pesisir Payang.

A series of Urban follies that tells a fiction story inspired by origins of Kuala Terengganu. The story is connected in a network of constellations from a centre axis borrowed from the Shah Bandar Square.

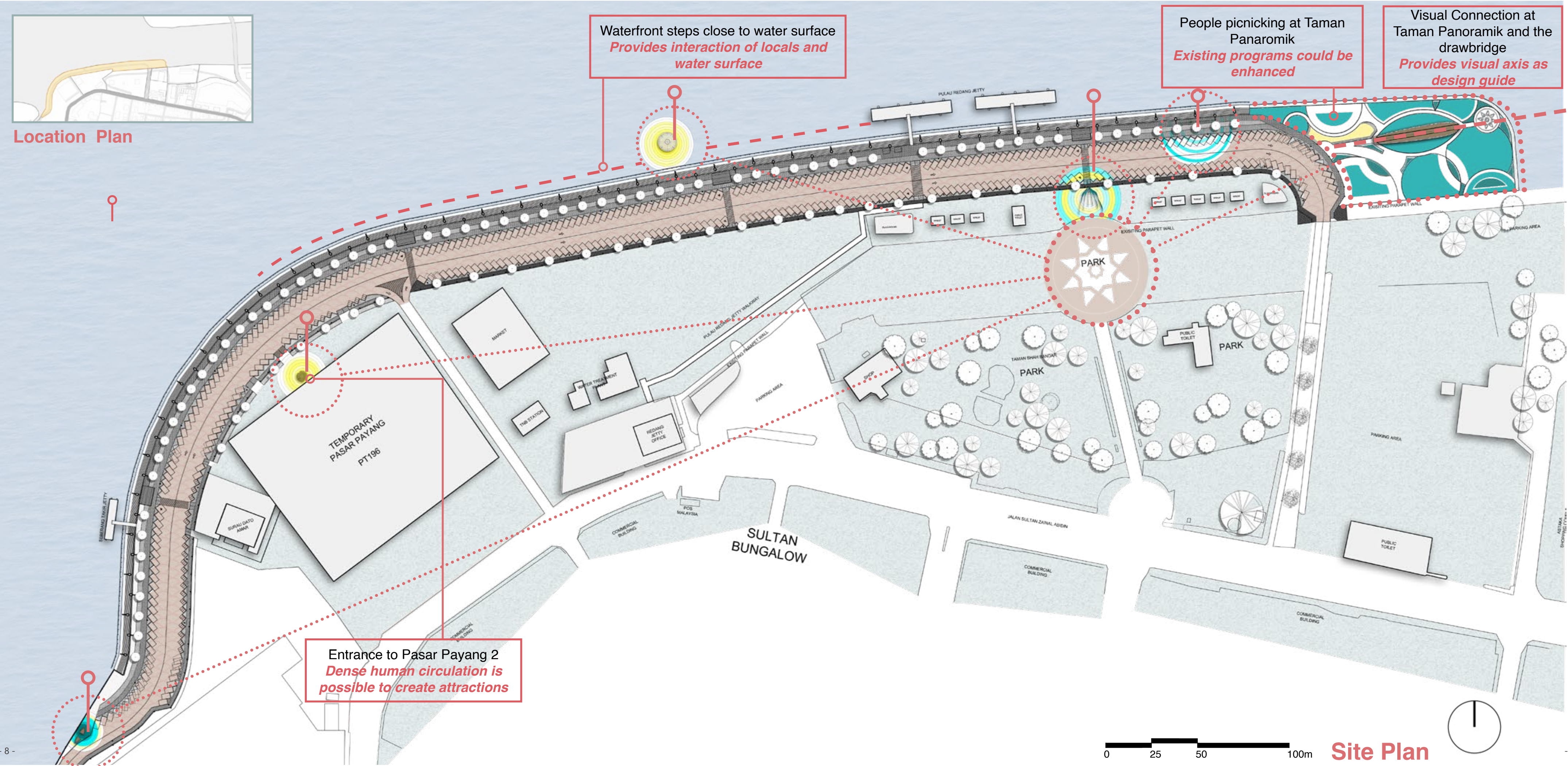
Cerita Payang is a series of follies sharing the same theme as the local context. From that, the concept came as presenting a fictional fishing village story in K.T, mainly harnessing the traditional fishing village life and Adding on to the existing modern developments around the site as well.





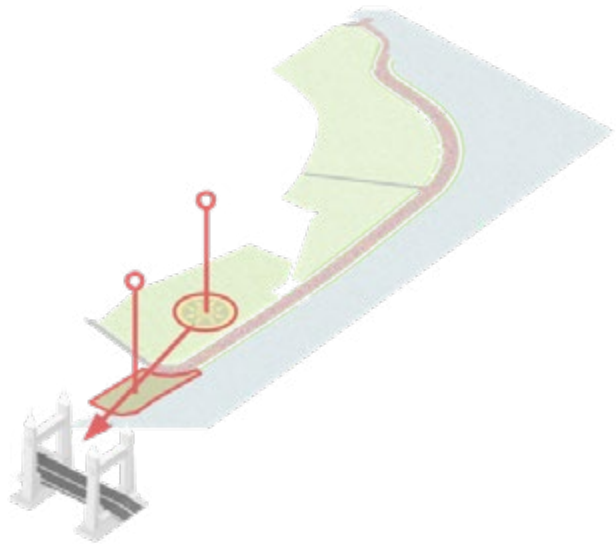


Location Plan



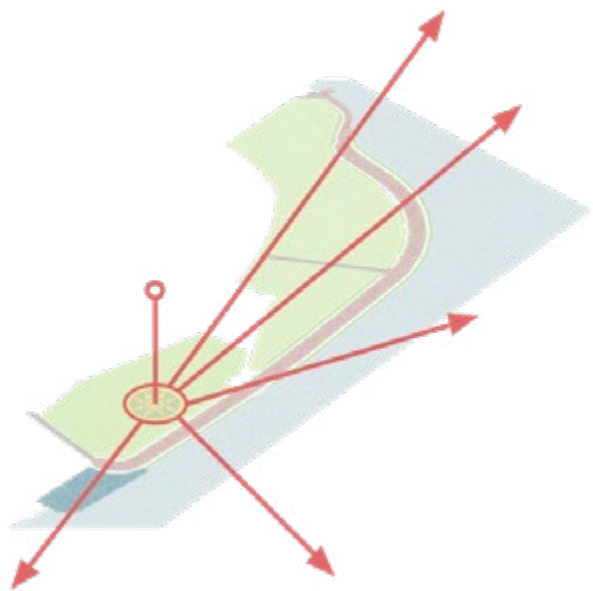


# Design Developments



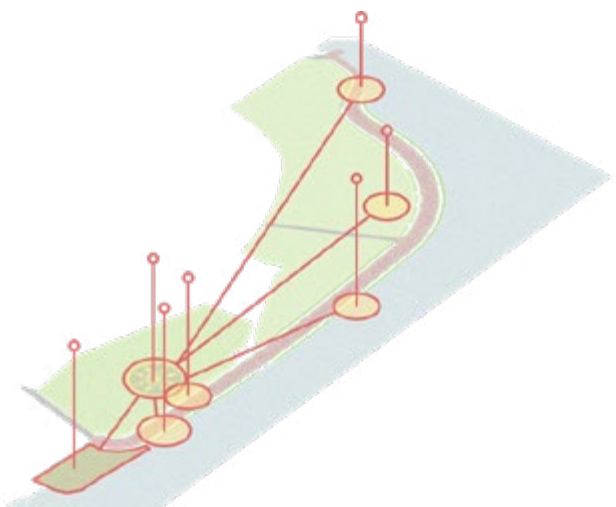
## 1. A Centre, an axis

- Borrowing the existing compass floor pattern on *Shah Bandar* Square. Focusing the axis that aligns *Taman Panoramik* and the drawbridge linearly.
- Enhancing existing *Taman Panoramik* into a better picnic location for locals.



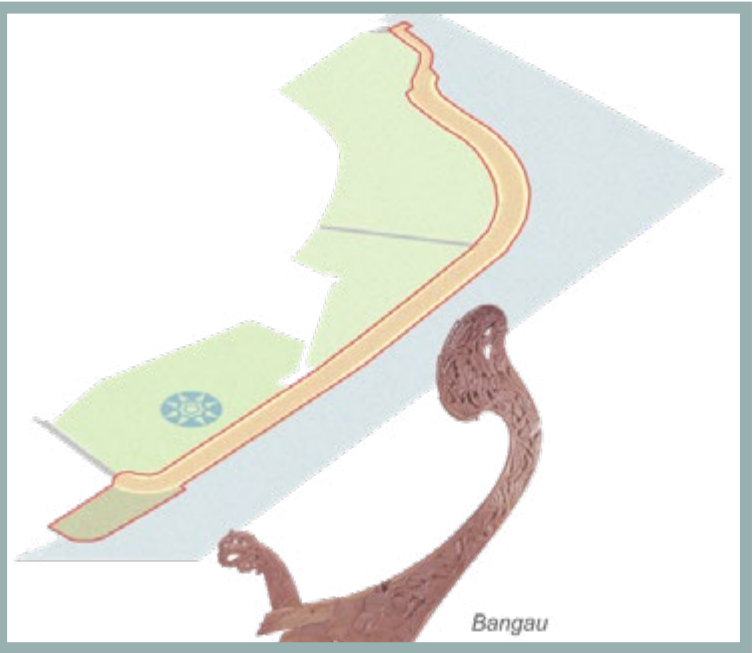
## 2. The Radial Search

- Start to look more possibilities in multiple different directions.
- A series of radial linears are aligned to its respective axis with the central compass shape at the square.



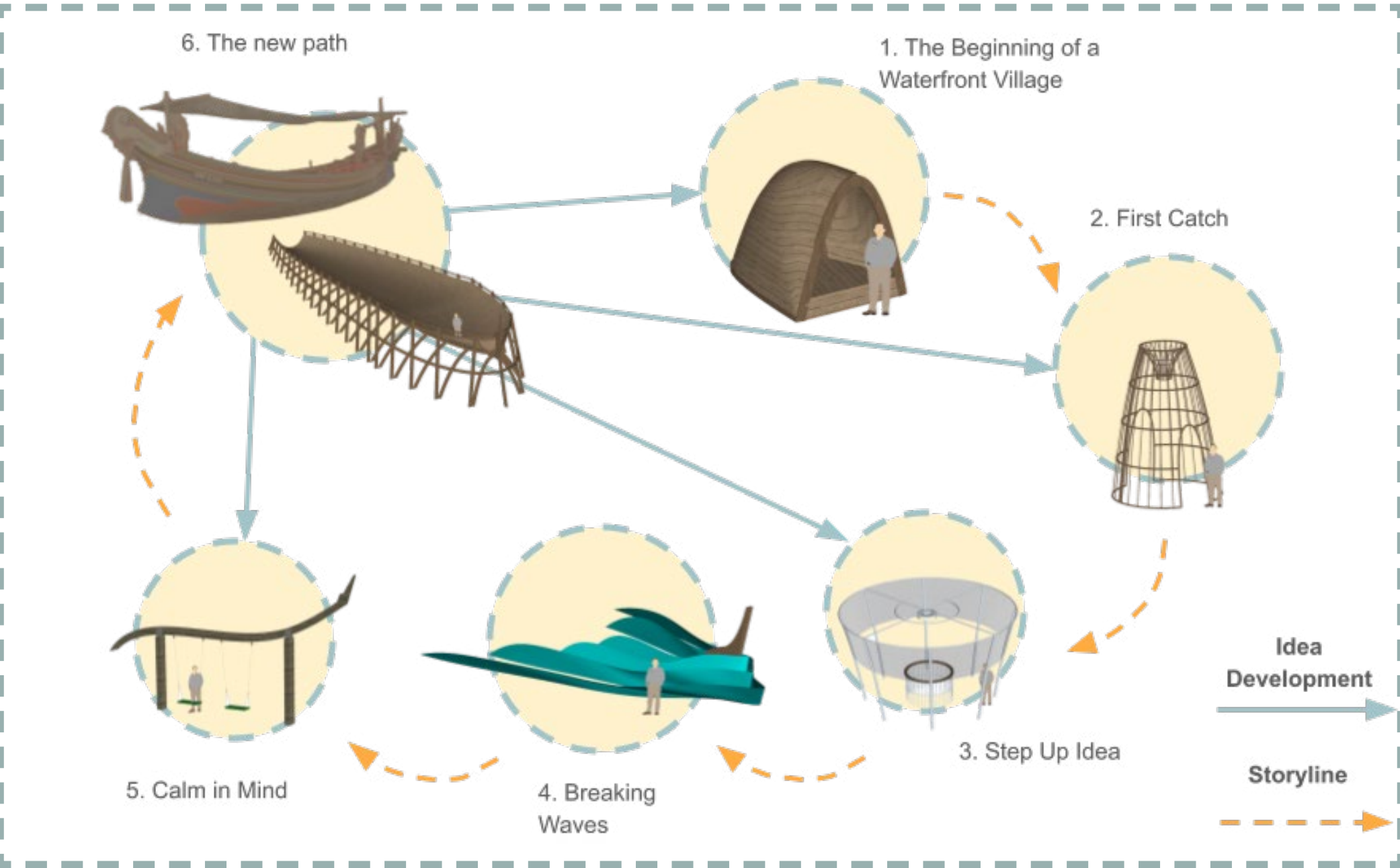
## 3. A Network

- The locations selected & axis are connected in a Network.
- The network forms a constellation with a series of follies.



## Urban Follies

- The main idea of the follies based on one of the cultural handicrafts, which is boat making.
- We were also inspired from the road layout of *Pesisir Payang* as it formed like the *Bangau*.







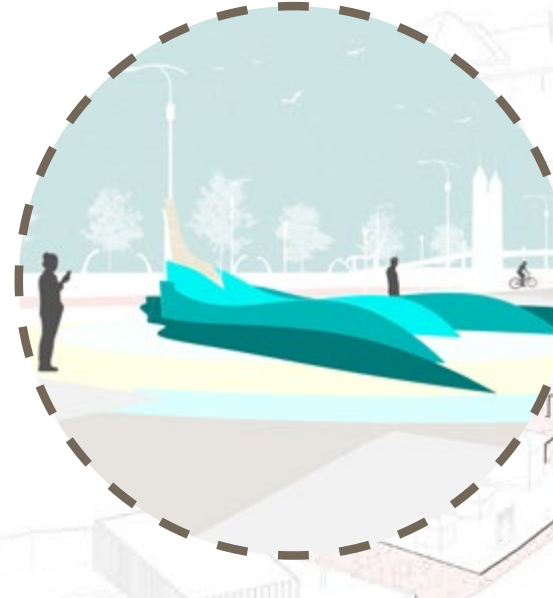
## Chapter 6 : The new path

Matured development shall lead to a big leap. Largest main folly at the end aligned towards the Terengganu Drawbridge. Signifies a new stage of development, ready to sail towards the open world.



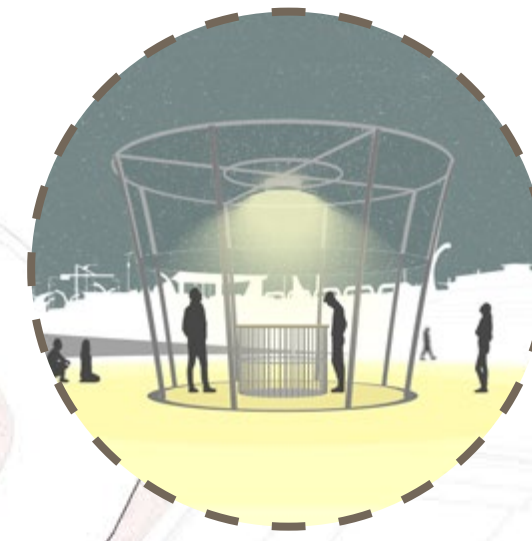
## Chapter 5 : Calm in Mind

Being harsh along the journey, there were always time to relax and self reflect. Simple structure extracted from the boat loft ridge and turned into swing. Time to enjoy breezes and gaze upon waterfront views.



## Chapter 4 : Breaking Waves

This Folly was inspired by the *Kepala Linggi*, the front head of the boat which functions as a wave breaker while sailing. Waves are more complex challenges for the village development process. It was breakthrough anyways as locals keep moving forward.



## Chapter 3 : Step Up Idea

Better ways and ideas leads to innovation and improvements. Using one of the fish netting ways : *Pukat Dalam* (Encircling Gill Net). Visitors will be attracted like the fishes into the net area as how it supposed to operate.



## Chapter 2 : First Catch

Next folly is a form of a Fish Cage called *Perangkap Ikan Bubu*. Searching methods to sustain the civilization from preying fishes for food source. Extra catches would be turned into Economical source, improving the quality of life for the village.

## Chapter 1 : The Beginning of a Waterfront Village

A capsized, split boat as the first folly. Describes a rough start of a civilization along the Terengganu River. Using it as a resting shelter as it doesn't seem to be a totally bad situation.





# Project 2

Precedent Studies :

## Mt. Fuji World Heritage Centre

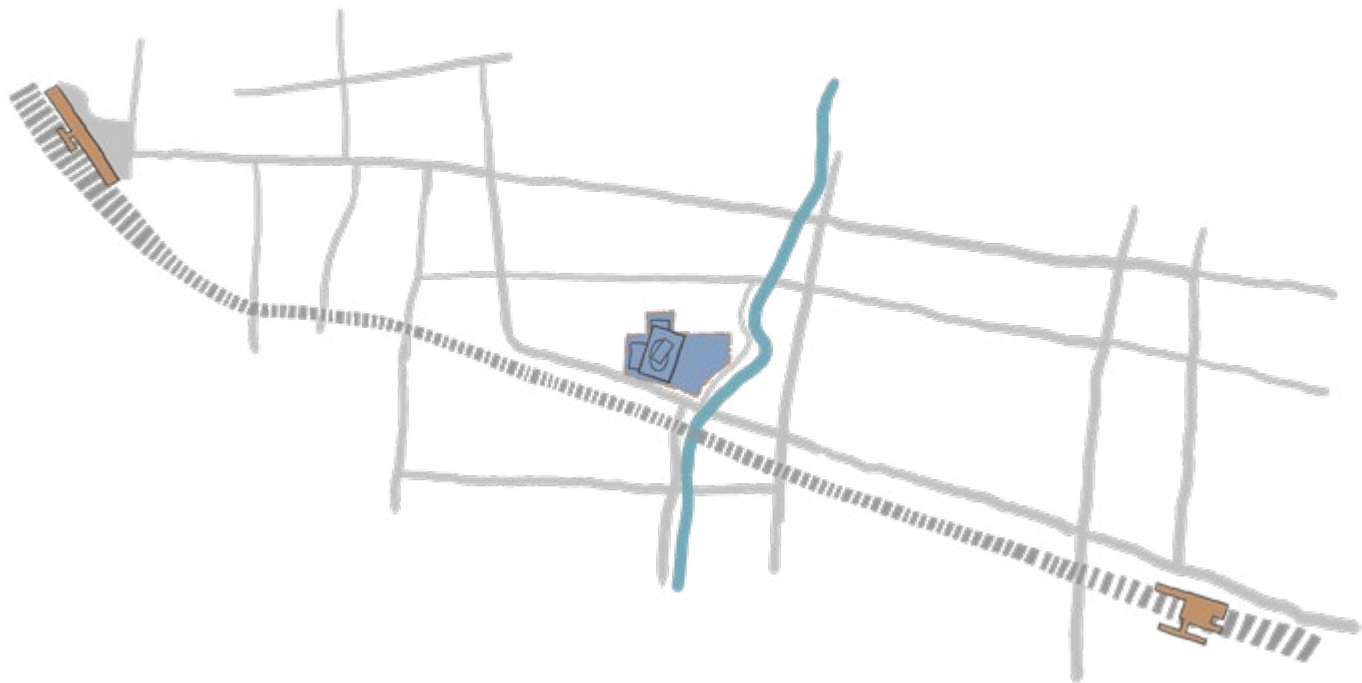
The Mount Fuji World Heritage Center, Shizuoka, Shizuoka-ken Fujisan Sekiisan Center is a museum in Fujinomiya dedicated to Mount Fuji. Opened in 2017 to commemorate the mountain's designation as a UNESCO World Heritage Site four years prior, the center boasts a viewing deck affording great views of Fujisan and a variety of exhibitions pertaining to the volcano's seismology, history and cultural significance. The building has an inverted conical form that reflects in the pond outside to reveal the shape of the iconic mountain.

<b>Architect</b>	: Shigeru ban
<b>Year Completed</b>	: Dec of 2017
<b>Locations</b>	: 5-12 Miyacho, Fujinomiya, Shizuoka 418-0067, Japan
<b>Coordinates</b>	: 35°13'25.5"N 138°36'32.8"E
<b>Area</b>	: 3400 sqm
<b>Client</b>	: Shizuoka Prefecture

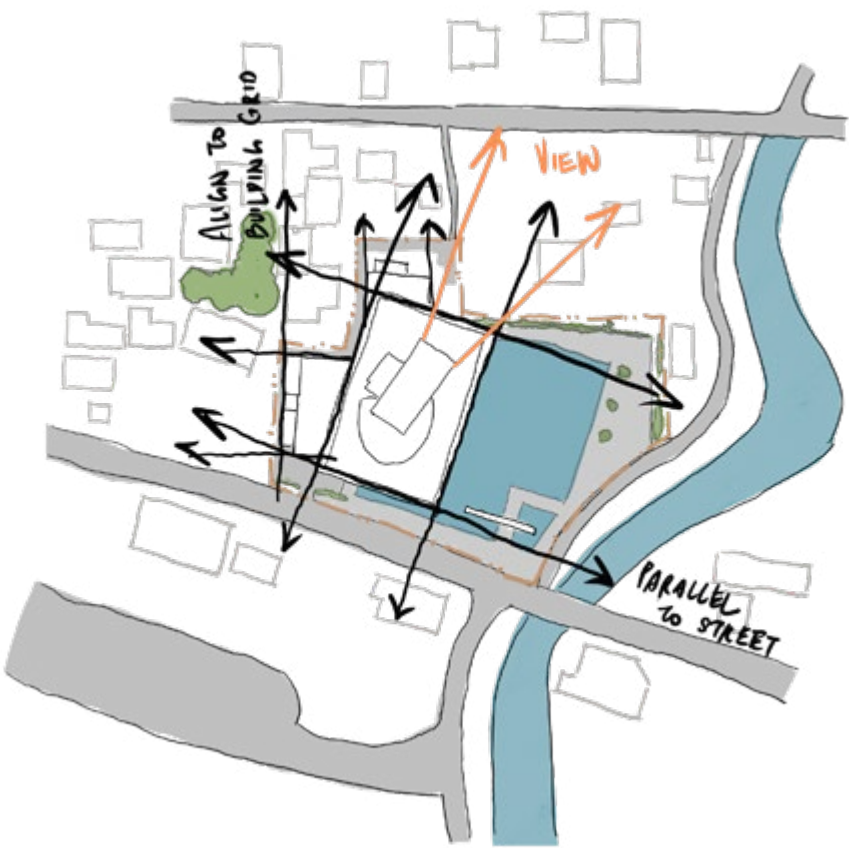




Design Developments



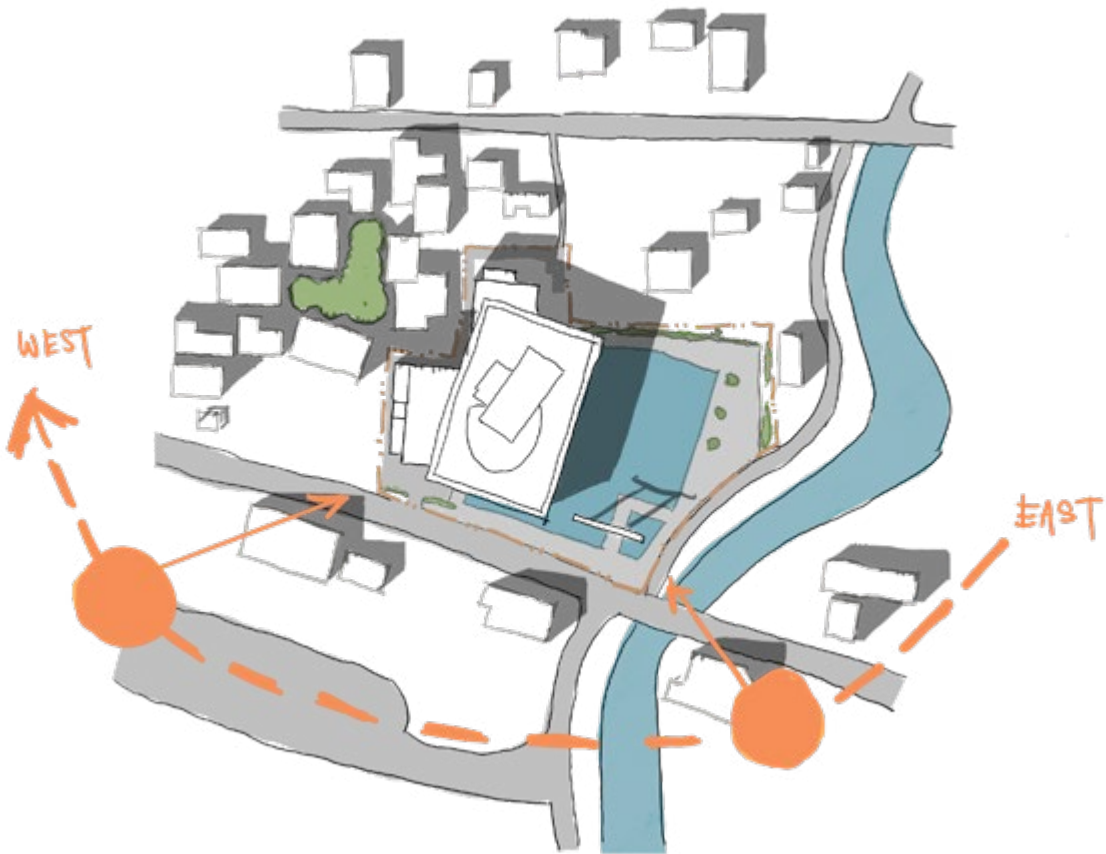
The Mount Fuji World Heritage Center can be reached on foot in about ten minutes from Fujinomiya Station and nishi Fujinomiya Station and is located along the main approach to Fujisan Sengen Shrine.



The Building Orientation is aligned to the nearby buildings grid, the Observation Deck on the top floor is facing the Mount Fuji for the great view of Fujisan.



The Mount Fuji World Heritage Center is surrounded by various car parks within 200m radius.



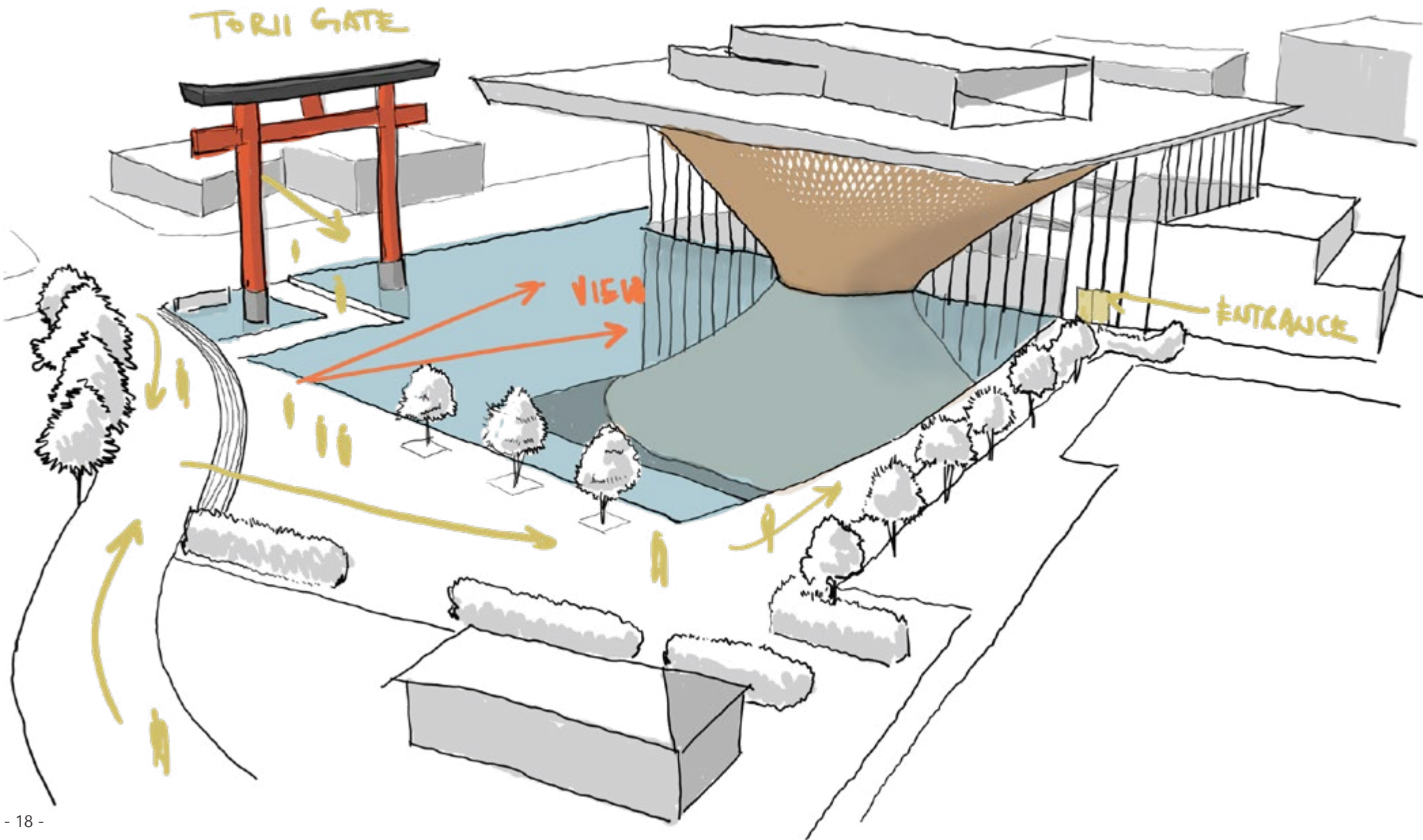
The Building receives ample solar gains throughout the day. However, the south facade was not well resolved as it uses blinds to reduce glares.





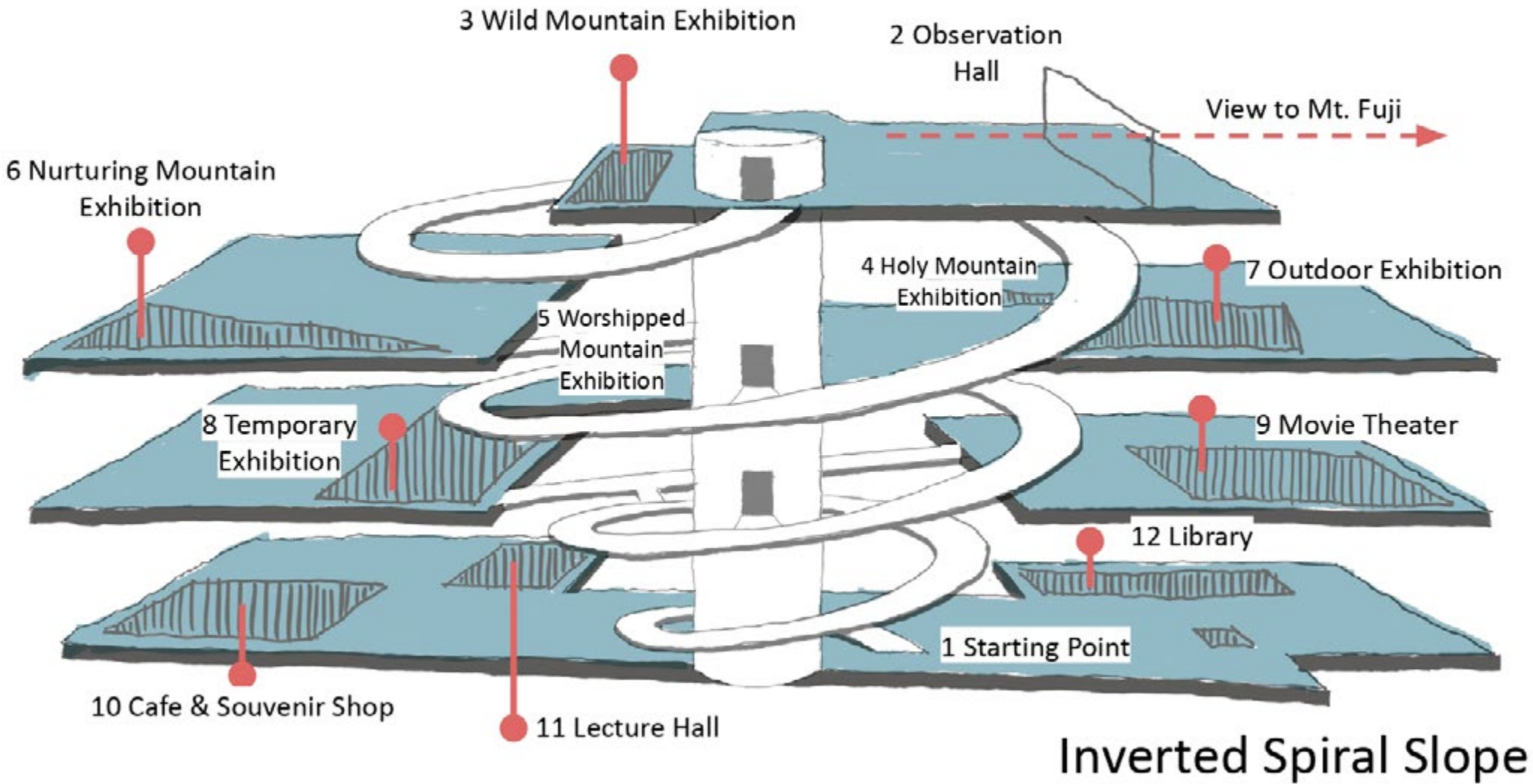
# Site Approach

The Torii Gate act as an indication for main entrance. After entering through the gate or the pedestrian route next to it, a grand view of the Mount Fuji structure reflection can be seen. The entrance for the heritage center is just next to the Mount Fuji structure.



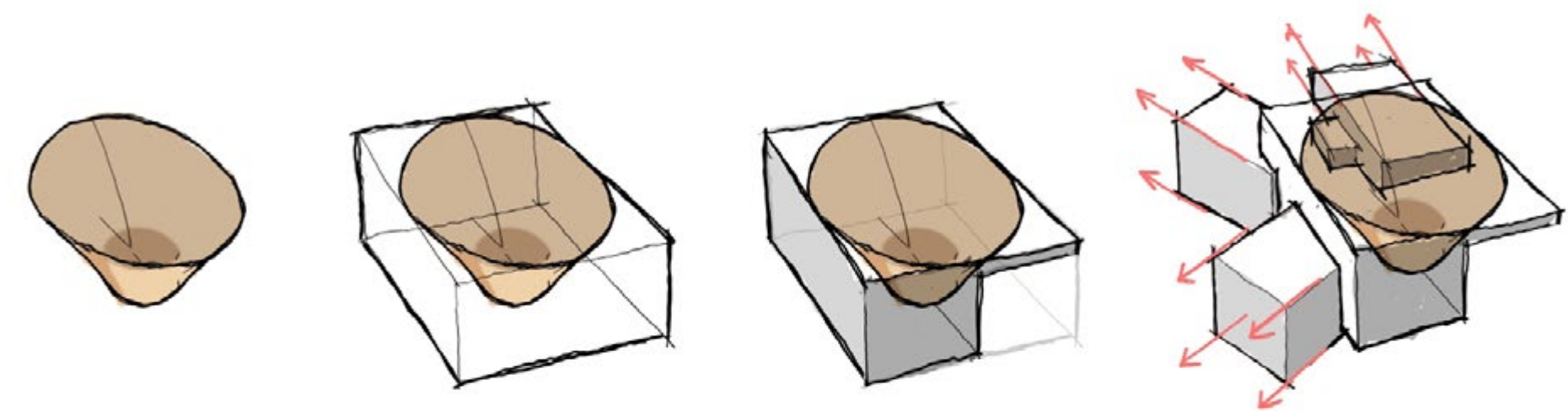
# Internal Circulation

Inside the inverted mountain houses a spiral ramp that guides the visitors with a virtual climbing experience to the observation hall to enjoy the scenery of Mt. Fuji. After enjoying the view, the visitors are guided down to the ground floor. This creates a unique circulation flow for the visitors.



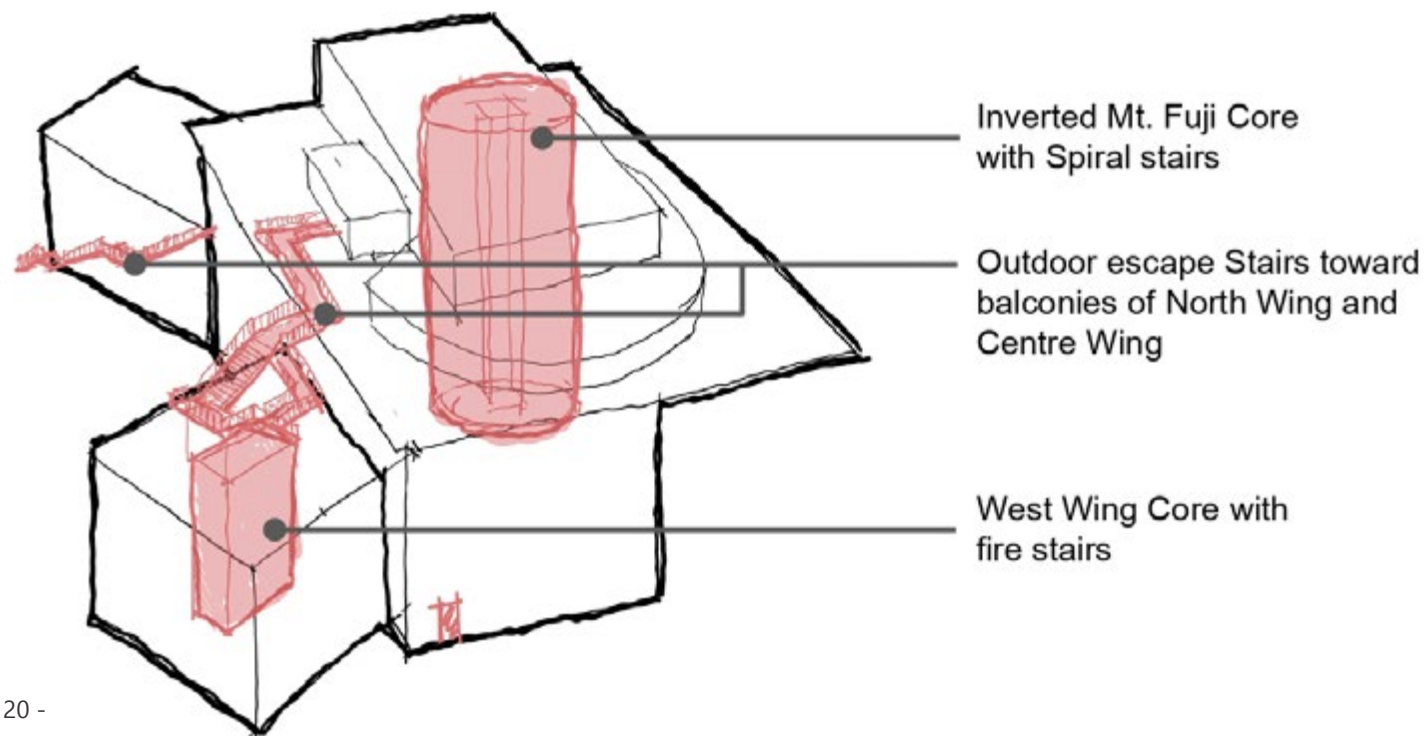


# Design Developments



- Inverted Mountain (Cone )**  
*Literate Initial idea responding to brief, as highlight*
- Enclosed with box**  
*The inverted cone define spaces and volume*
- Subtraction of box**  
*To further highlight the main feature*
- Addition and Extrusion to context and order**  
*Response to context and making it unique-to-specific-site*

# Fire Escape Strategy

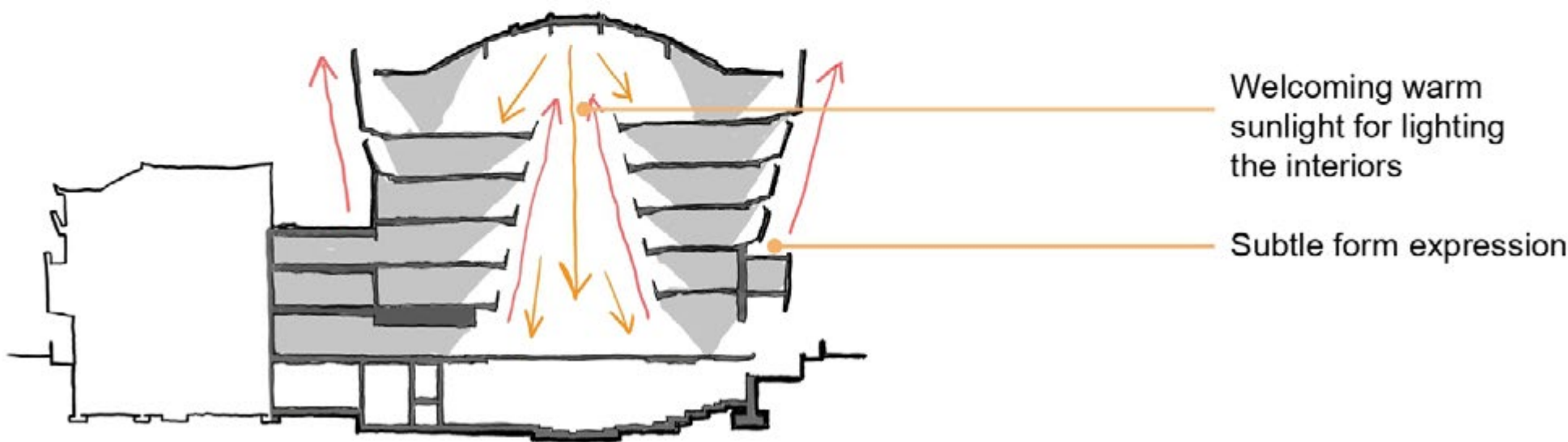
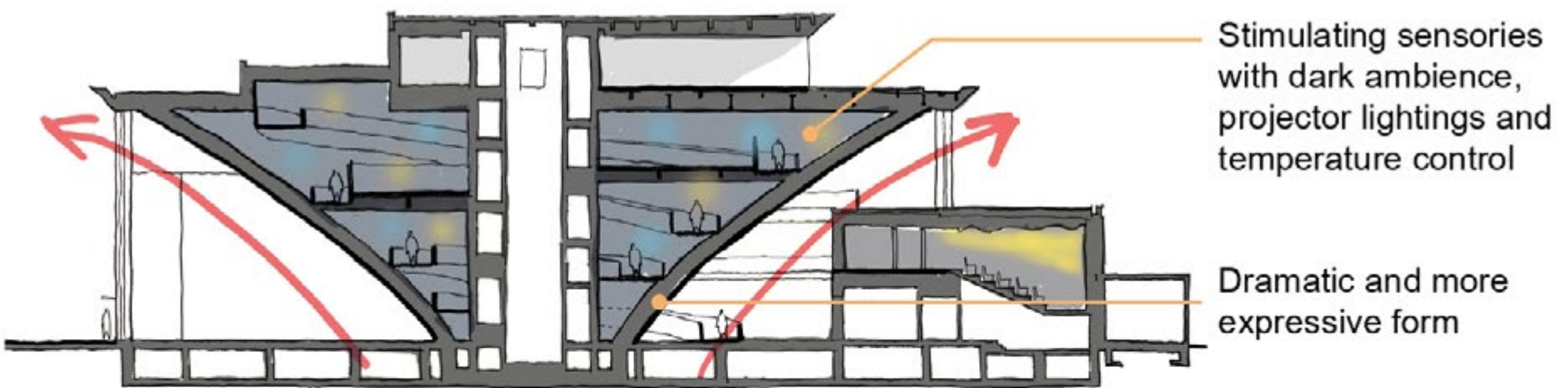


The building itself has 3 escape routes, 1 in every massing of the building. The top floor's 2nd escape path connects with the west wing in order to achieve at least 2 escape routes for every floor. Therefore it fulfils the passive fire fighting requirements.

# Comparison Studies

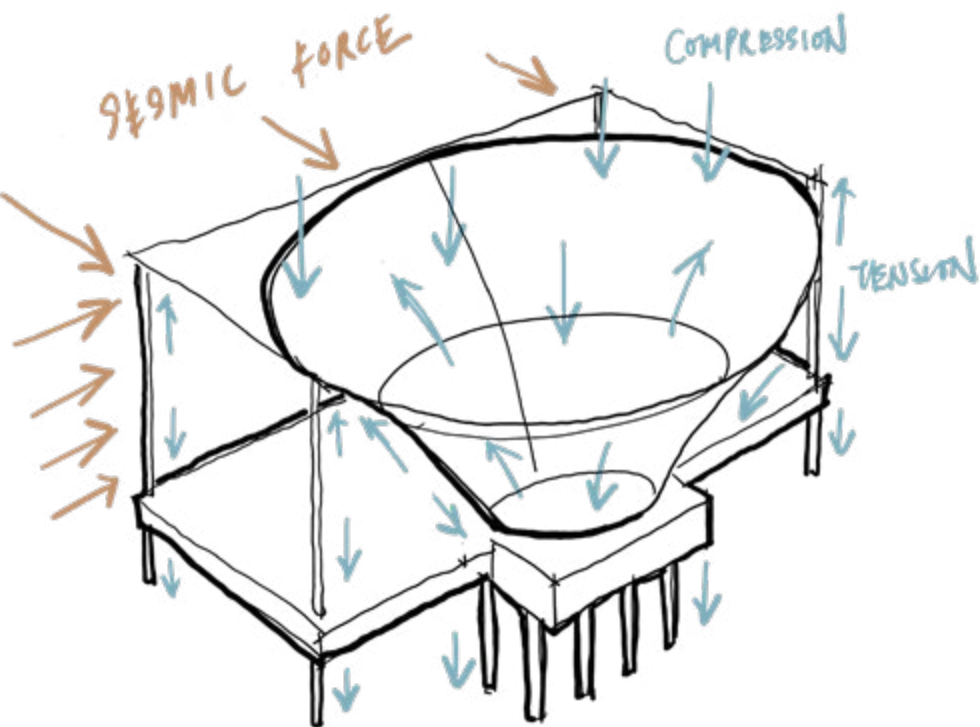
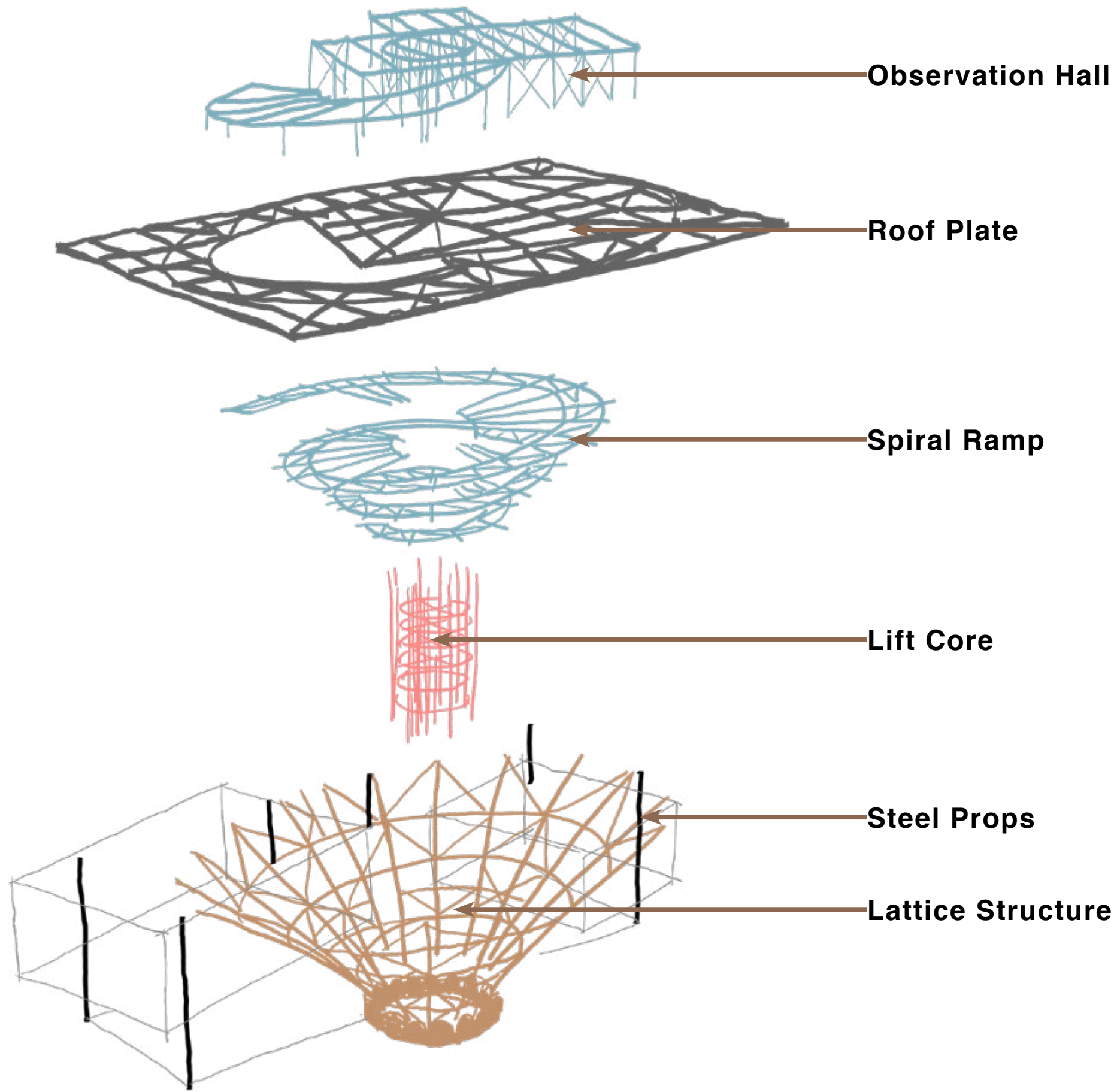
The summary of this comparison studies shows that both of the buildings do have the intention of biomimicry of natural objects, Mt Fuji and Sea Shells.

Both of the buildings have different spatial experience due to the function. Therefore the form outcome differs. In short, form follows function.

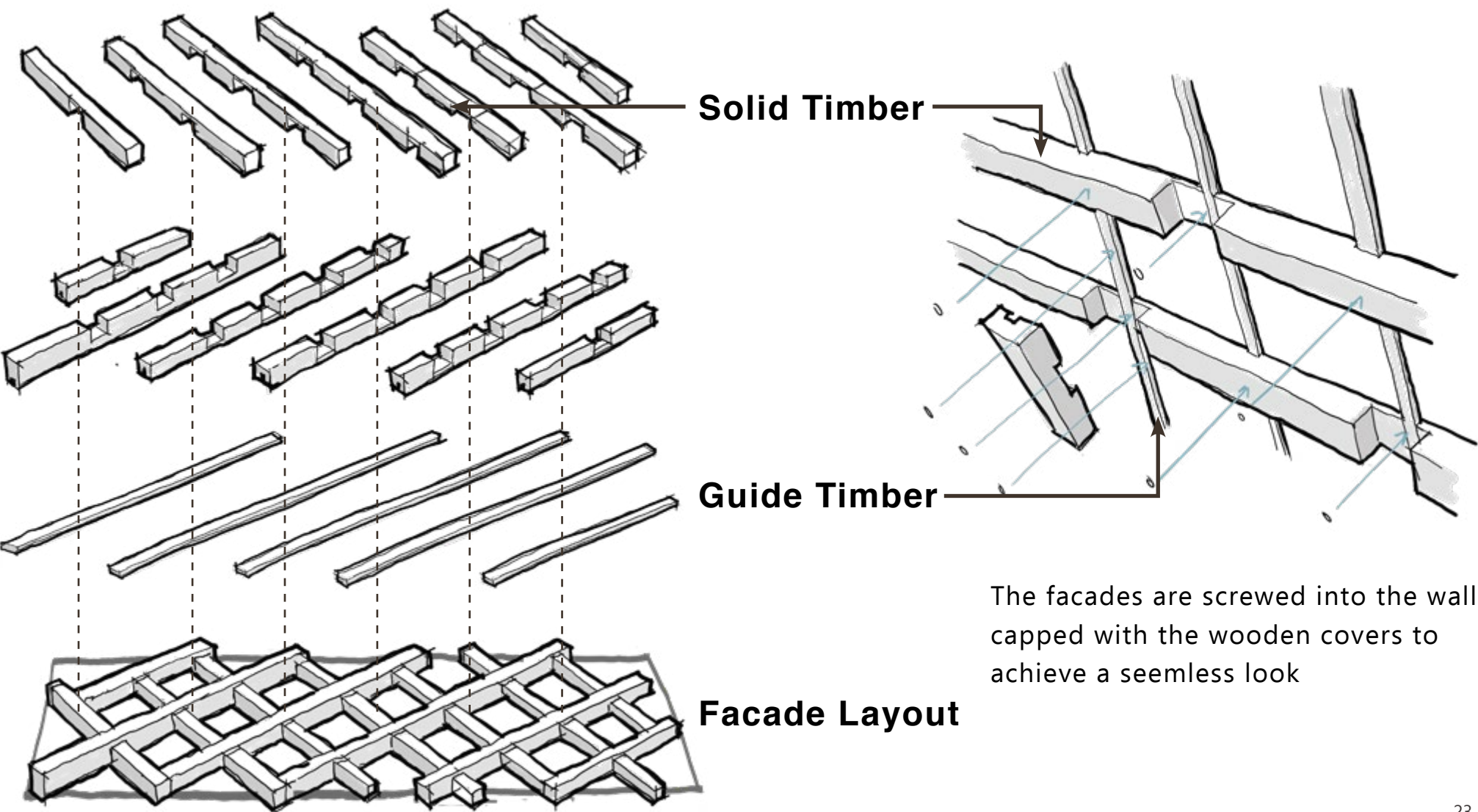




Exploded Structure frame

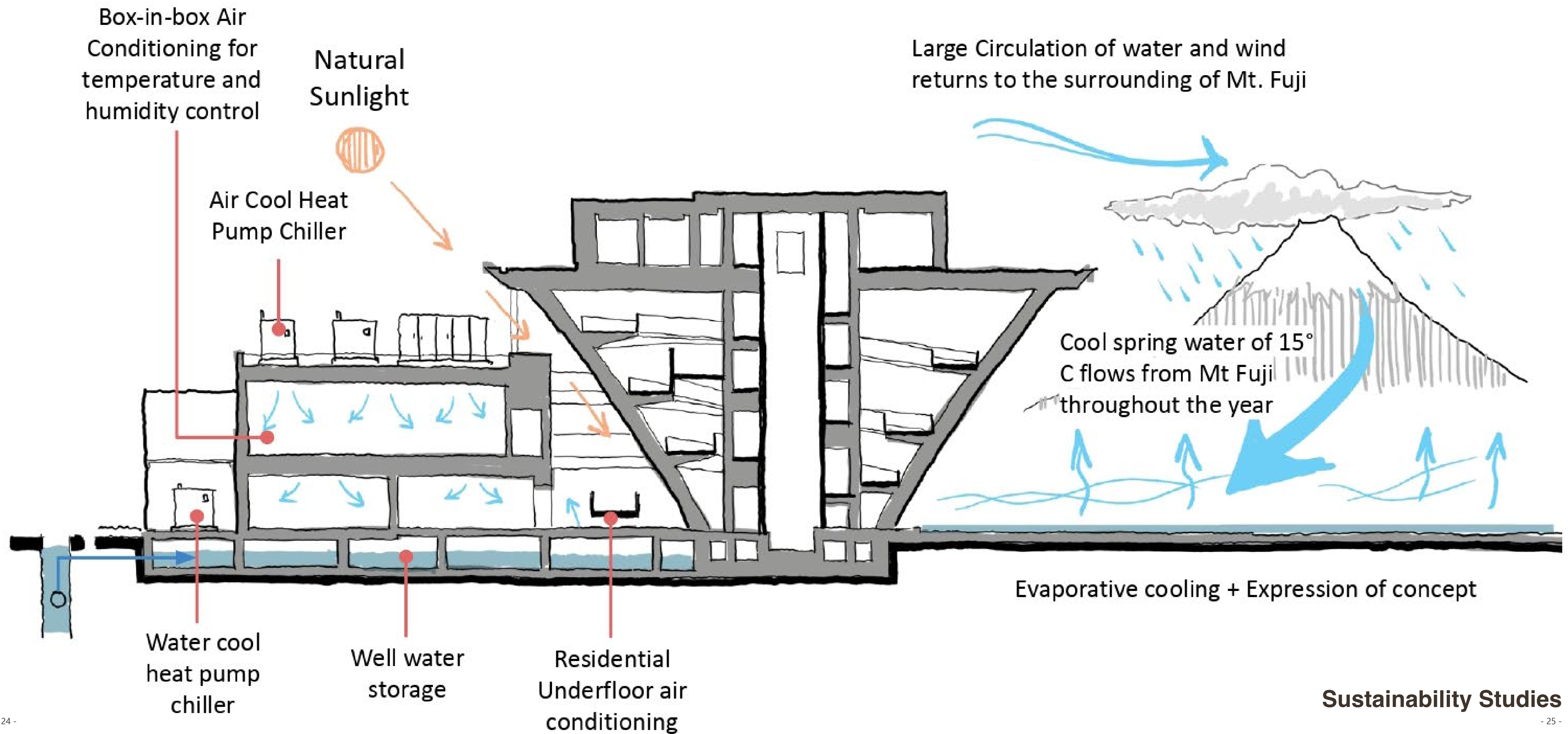


The building structure is designed to withstand the dynamic form structure and building blocks. Steel structure is mostly used in this building to provide adequate strength and stability with flexibility to withstand earthquake

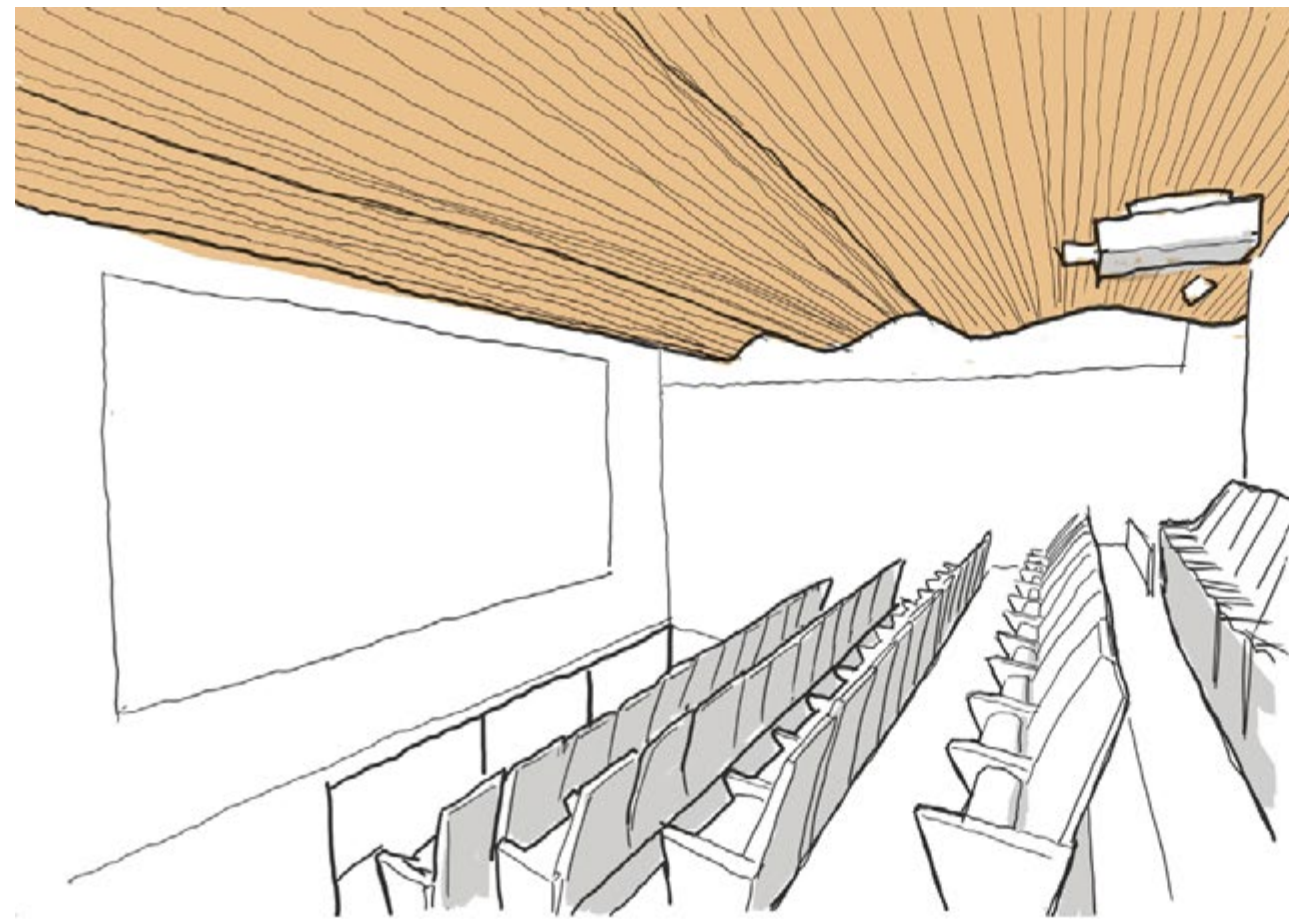
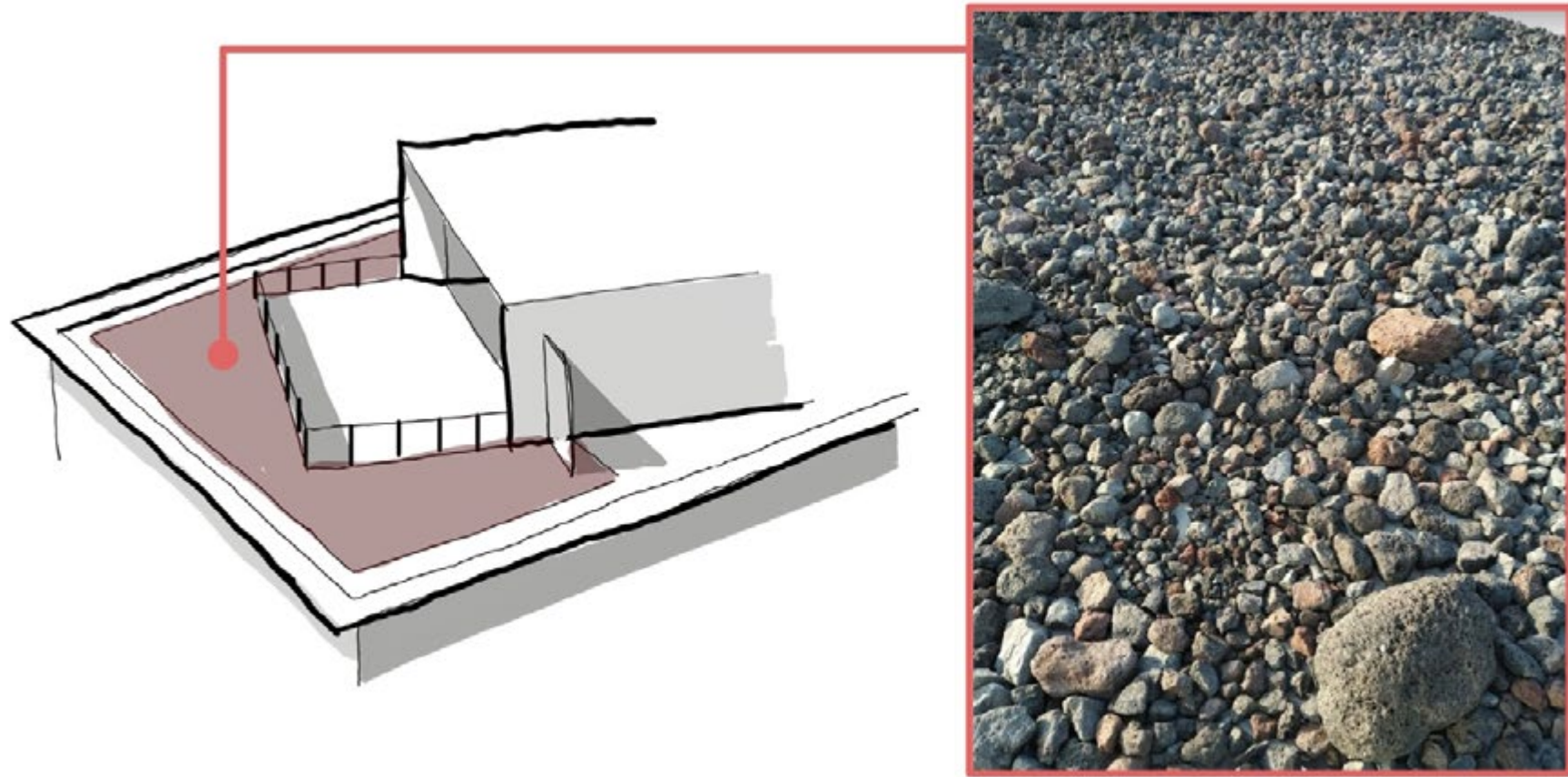


The facades are screwed into the wall capped with the wooden covers to achieve a seamless look





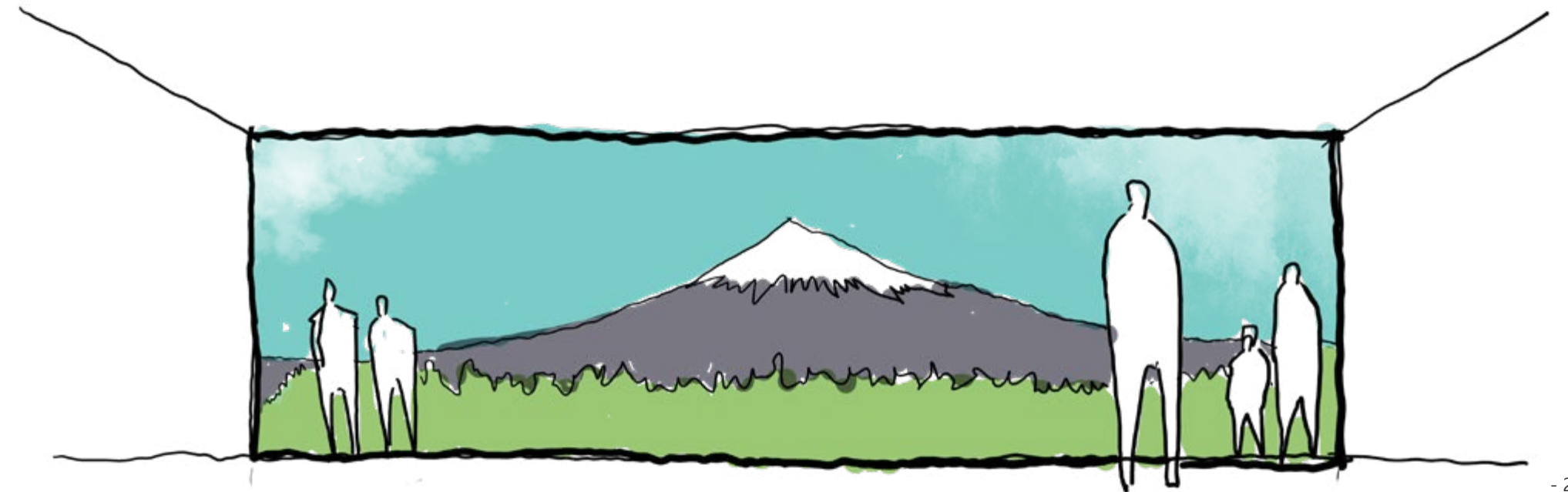
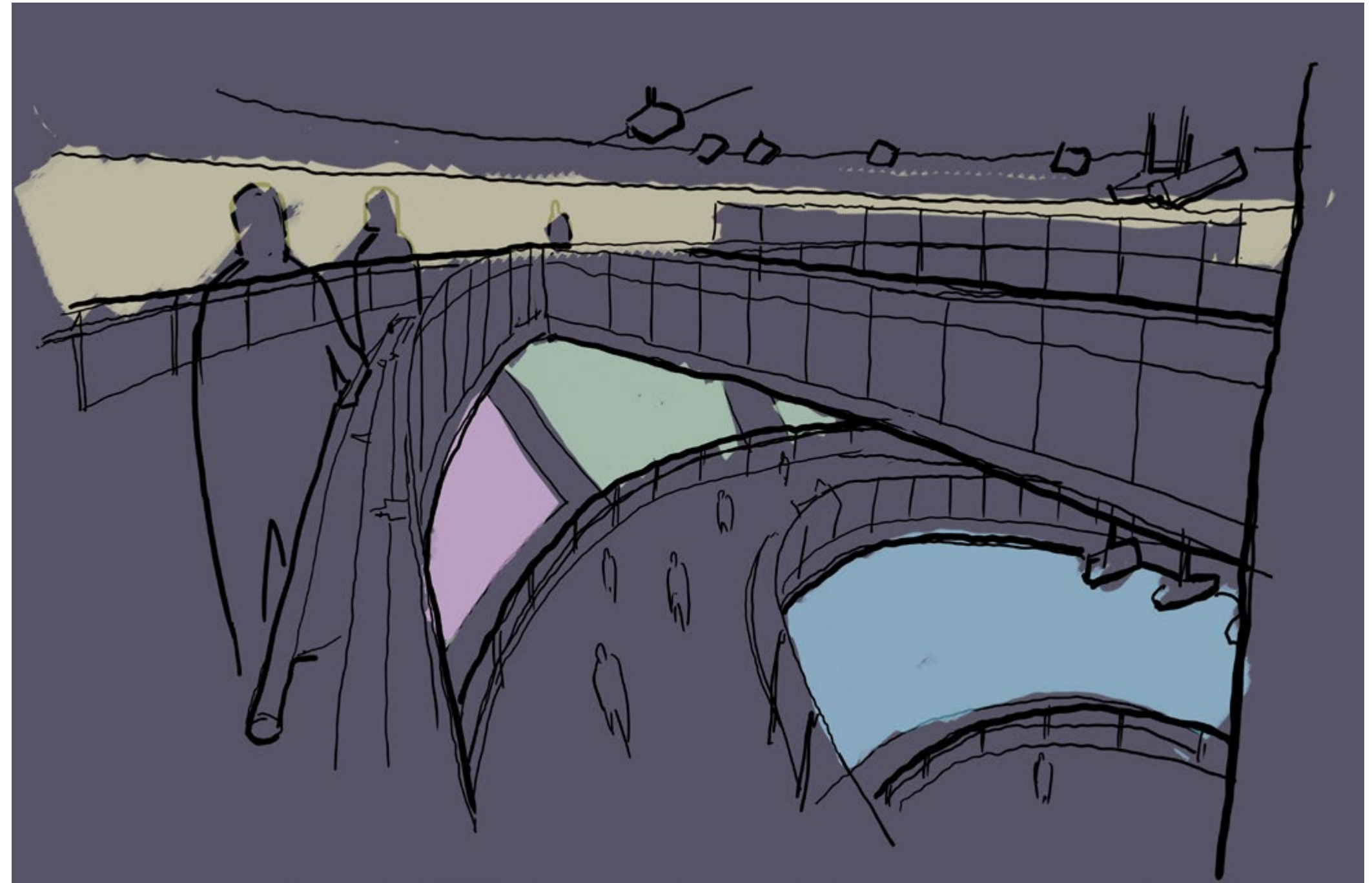




· Seating Chairs (Cafe, GF)

## Shigeru Ban's Signatures

Fire Rated Paper Rolls









# Project 3

Visitor Centre :

## KT Boat Activities Visitor Centre

Kuala Terengganu used to have boats or vessels as the main transportation. However, the boats are getting replaced by land vehicles as infrastructures on land are growing; making the locals spend less time on water. Hence, KT Boat Activities centre will be promoting boat activities of different scales, from boat rowing to having fun remotely controlling boats. The ultimate goal will be having the activity become a lifestyle rather than just for tourism.

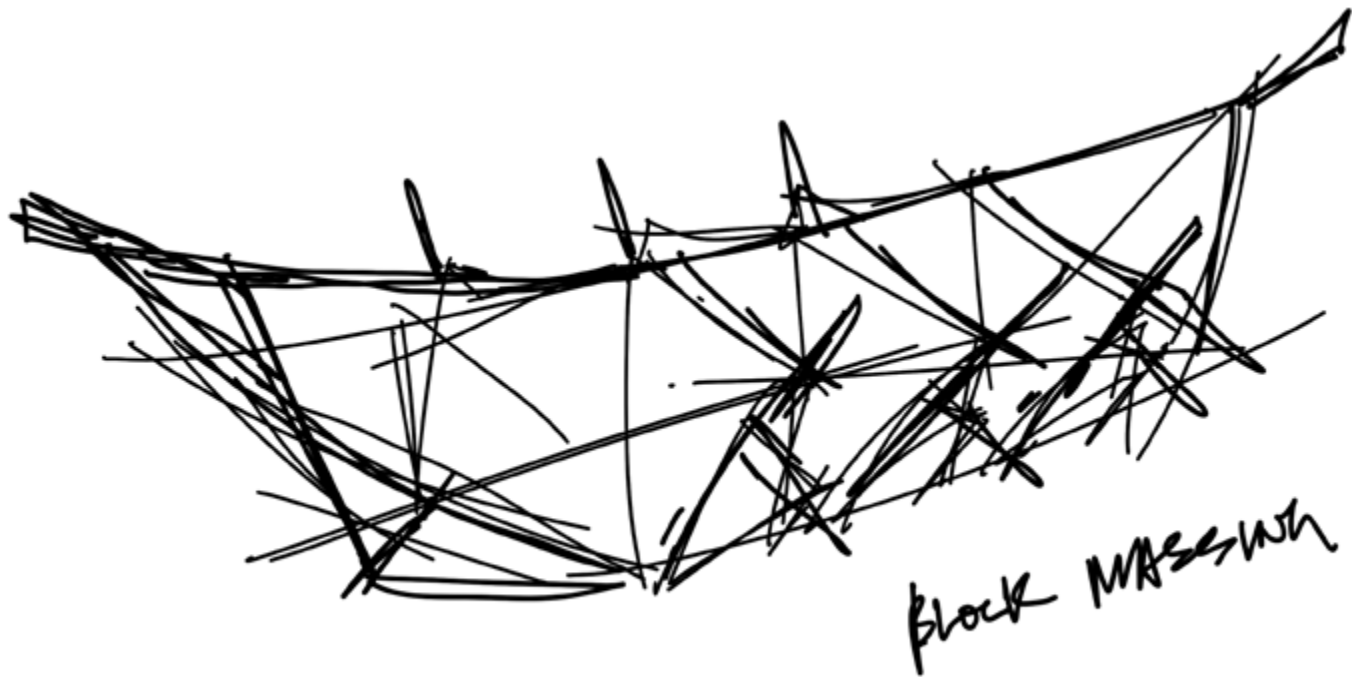
As promoting the traditional activities in Kuala Terengganu, the concept shall be a symbolic approach; which is taking the boat structure itself as inspiration. The design proposal harvested the building idea of different components of a boat such as keels, hulls and the loft structures. The concept is also an appreciation towards the local masters from the industry itself, as they see boat making as their passion and a form of art.



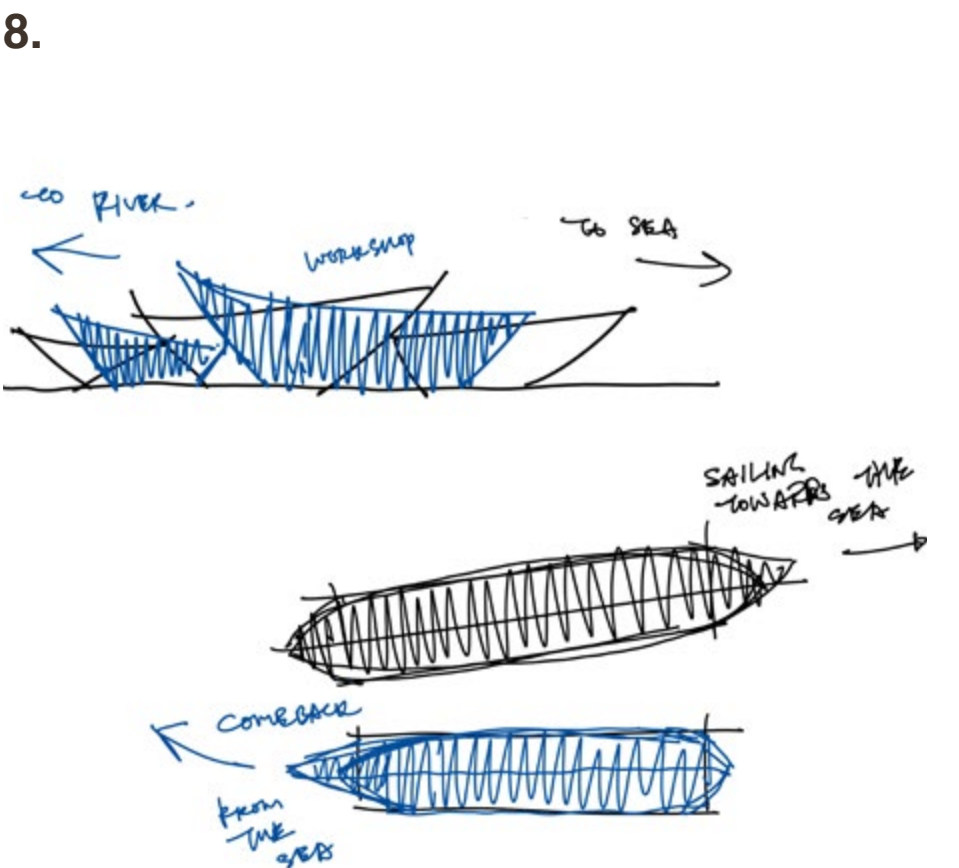
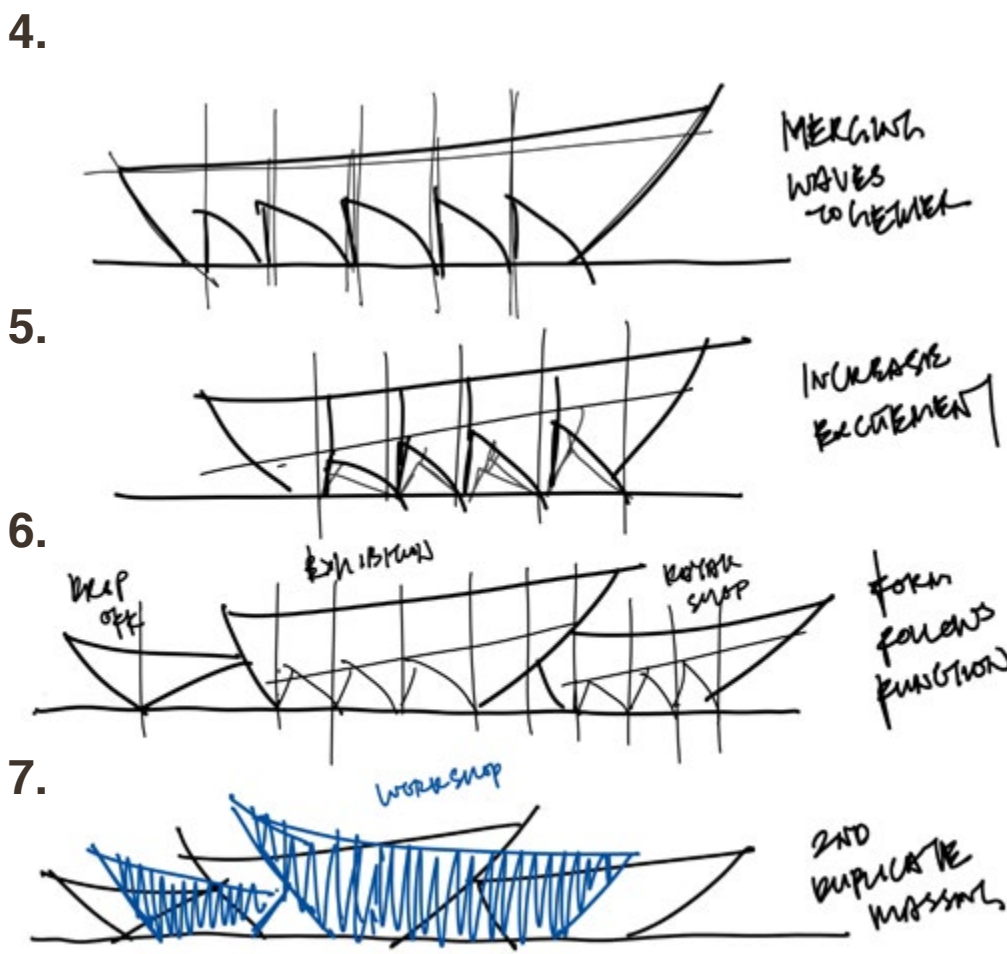
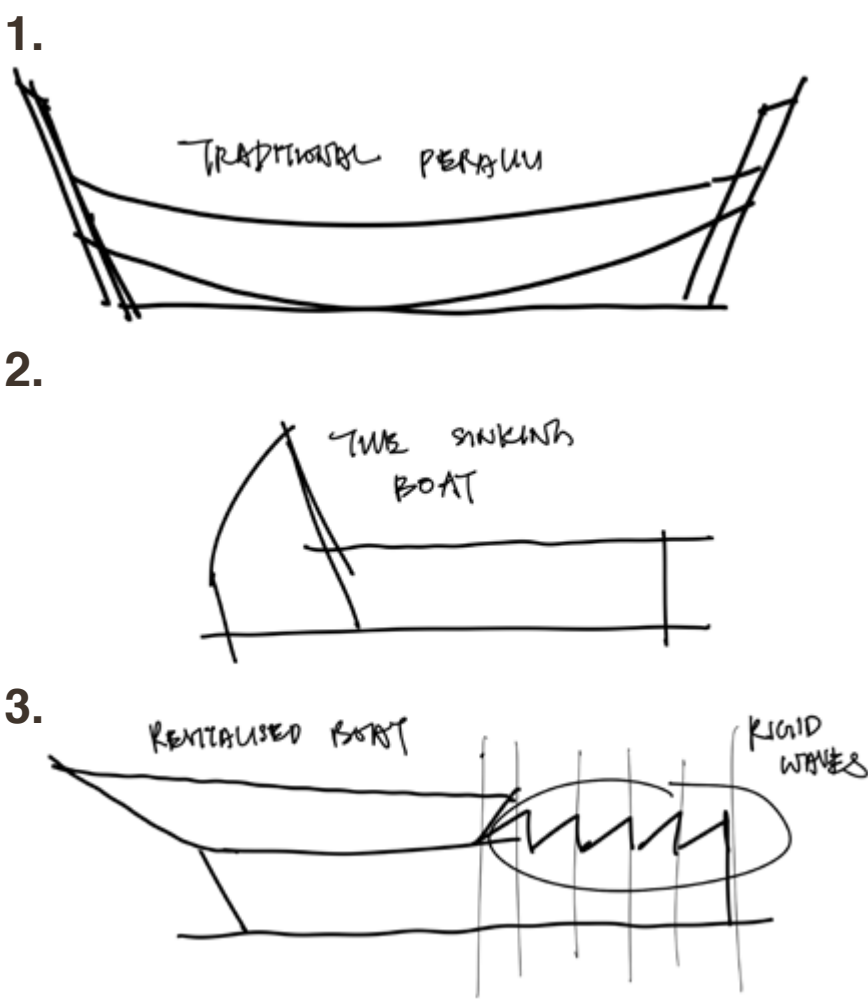


# Design Developments

The development process is described as a story of reviving a sunken boat. Started as a highlight of an issue, and got revitalised and brought away from it. The rest of the stages are more towards form following functions, with application of local malay vernacular architecture. Thus, it creates usable spaces within the form.

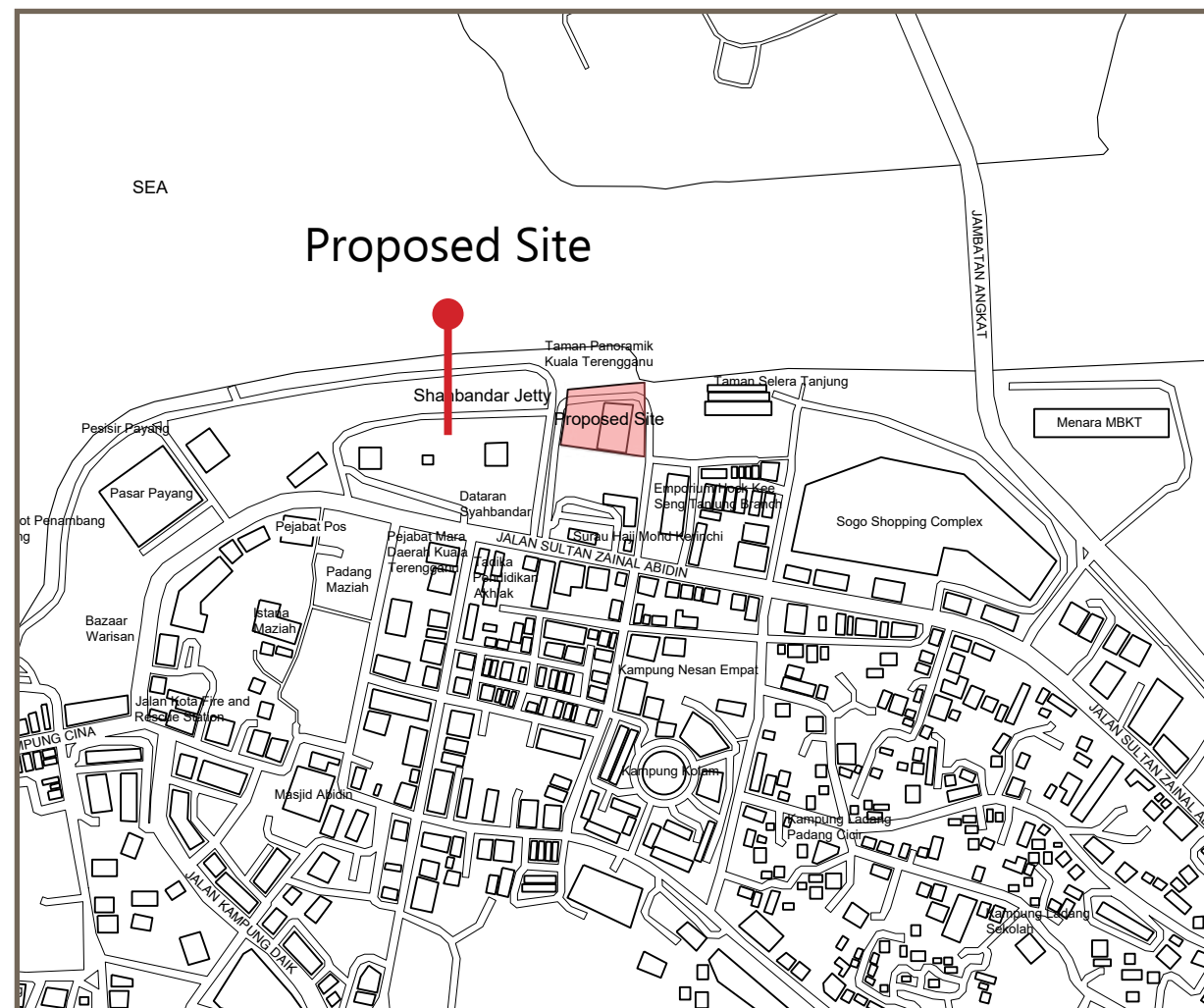
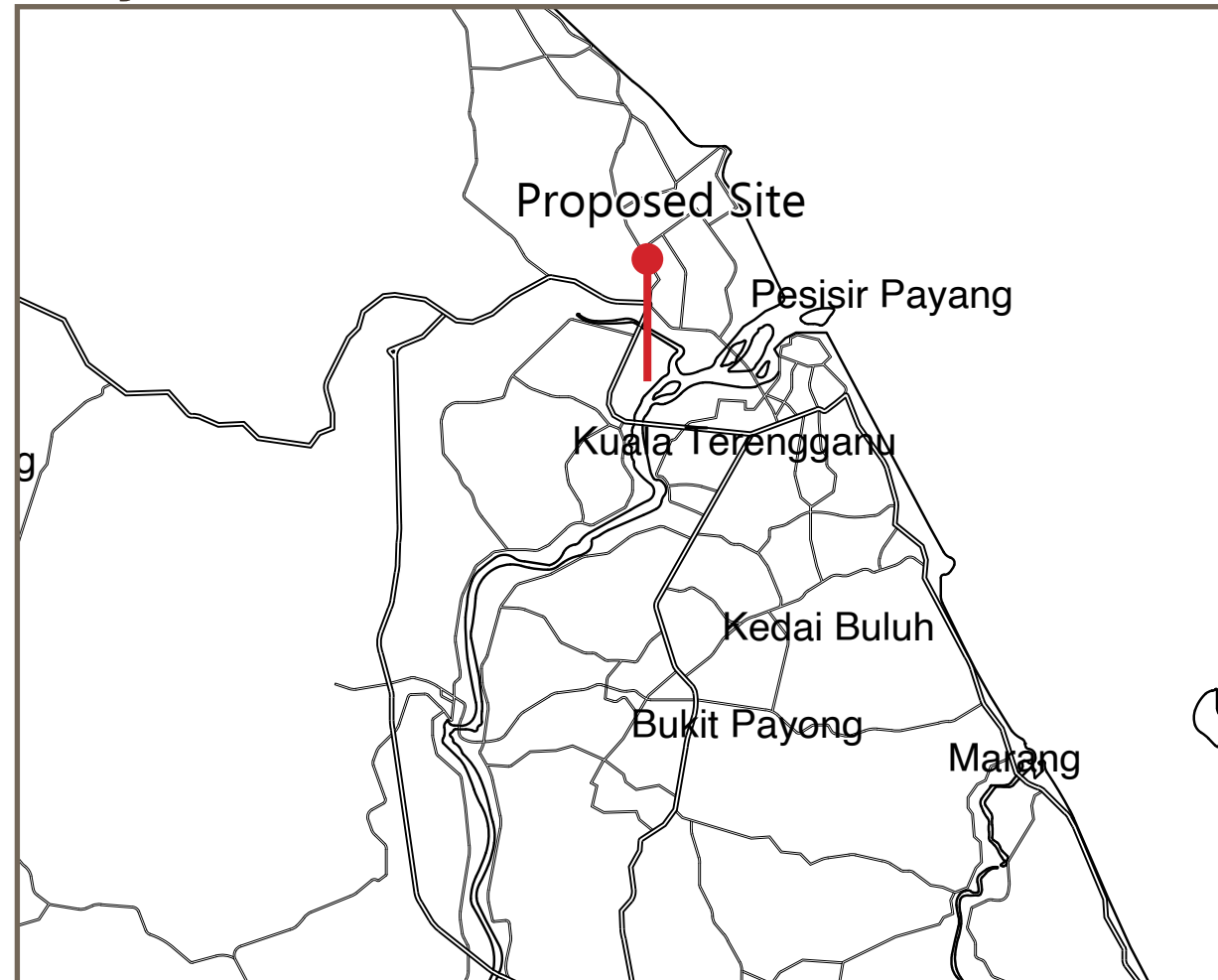


1. Starting form from the local's classic traditional boat, which is the Perahu Payang
2. The massing started off with a tip of the boat, left exposed on the water surface.
3. Soon, the boat is rescued and rebuilt, able to cruise around water, but it is still recovering from the damage in the past.
4. After stages of maintenance and recovery, the boat is able to cruise faster, waves splashed even higher. The boat and the water are getting merged together from this recovery excitement.
5. The wave breaker of the boat is doing a great job creating a hierarchy of waves along the cruise.
6. Expansion from a single massing into a few more, which has functional purposes
7. A second 'boat' is introduced in the development to house more programs
8. The directions of the boats are opposite, creating traffic on the water body. The boats even have connections to allow people to circulate in between the boats.



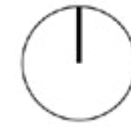


## Site Analysis



## Key Plan

## Location Plan



## Activities on Water

The design proposal's programs relates to most of the festivals and events held in Kuala Terengganu. There are quite a number of activities involving being exposed to water bodies such as in the open ocean in South China sea or lake in Tasik Kenyir. Therefore, these activities will naturally involve boats as the main transportation.

## Tasik Kenyir

## Visit Kenyir Year 2021



## Kenyir Fishing Challenge



## Kenyir Festival

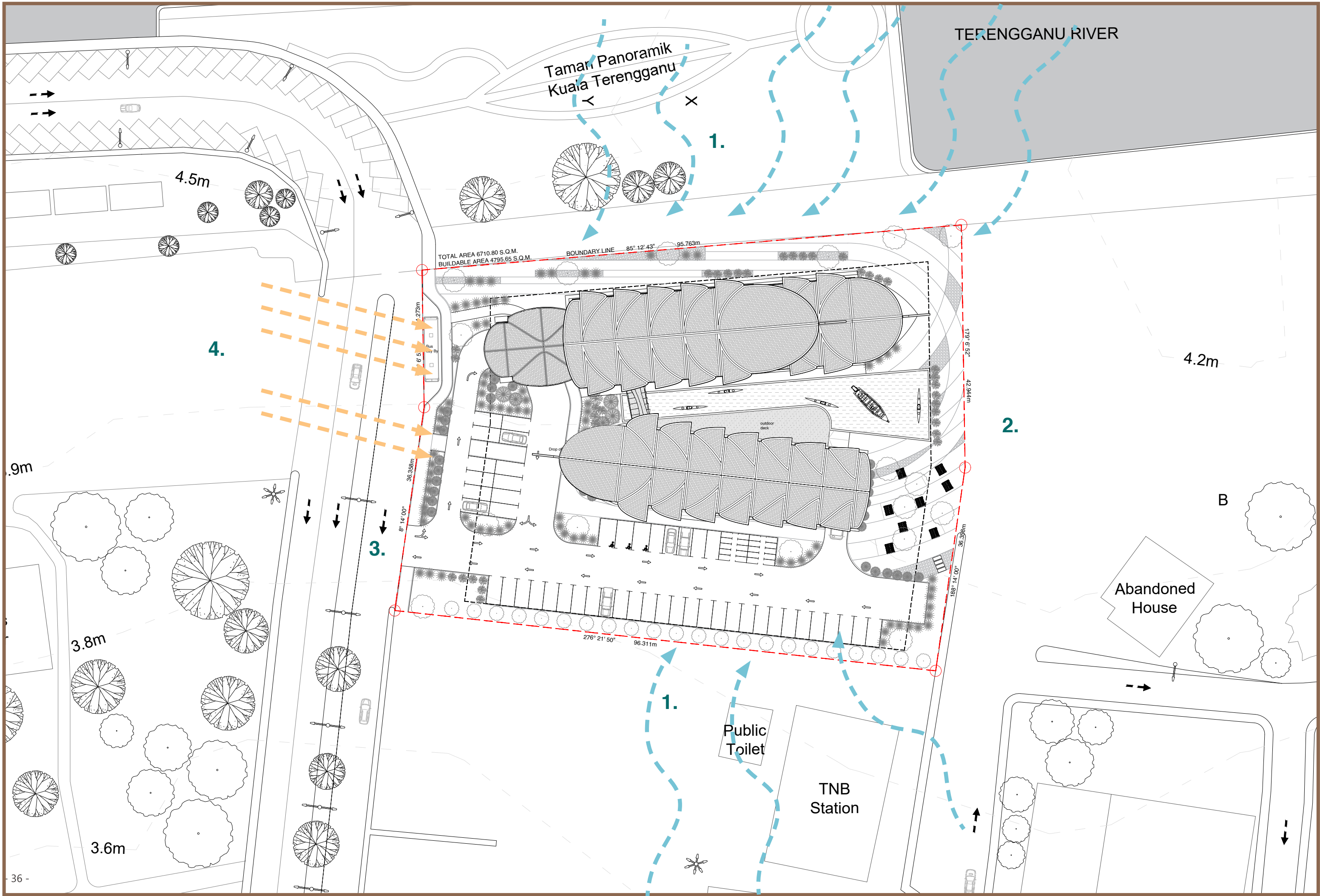


## Terengganu Open Ocean

## Terengganu Squid Jigging Festival

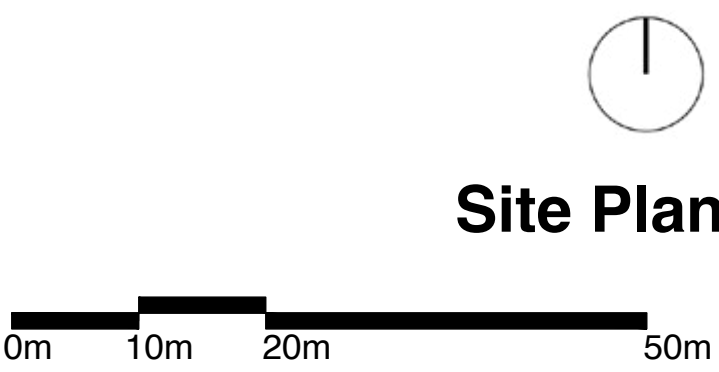






**Site Address & Coordinates**  
Kampung Tanjung, 20000 Kuala Terengganu,  
Terengganu  
5°20'17.2"N 103°08'25.3"E

- 1. Cross Ventilation**  
The micro wind circulation is rapid along the North East and South East due to sea breeze and land breeze. Hence, openings are facing towards the directions.
- 2. Context connection**  
The east side houses bazaar stalls, as well as the river. It will create opportunity of visitor circulate around the site from east
- 3. Circulation**  
Visitors circulate into the site's west side from the main road along Pesisir Payang
- 4. Solar Exposure**  
West side is shaded with overhangs and louvers. Louvers filter the glare, still giving appreciation of the sunlight.





# Proposed Programs

## Souvenir Shop - L1

Housing products produced from the workshop, as well as other boat activity gears and miscellaneous.

## Boat Rental - GF

House of types of rowing boats for rental.

## Workshop - GF

For visitors who prefer building the boat more than rowing on it.

## Outdoor Deck - GF

For boat docking and safety crash courses.

## Main Exhibition - L2

Visitors learn about the boat activities through a larger scale of exhibits.

## Temporary & other exhibition - L1

Seasonal exhibits with smaller scale exhibits along the hallway.

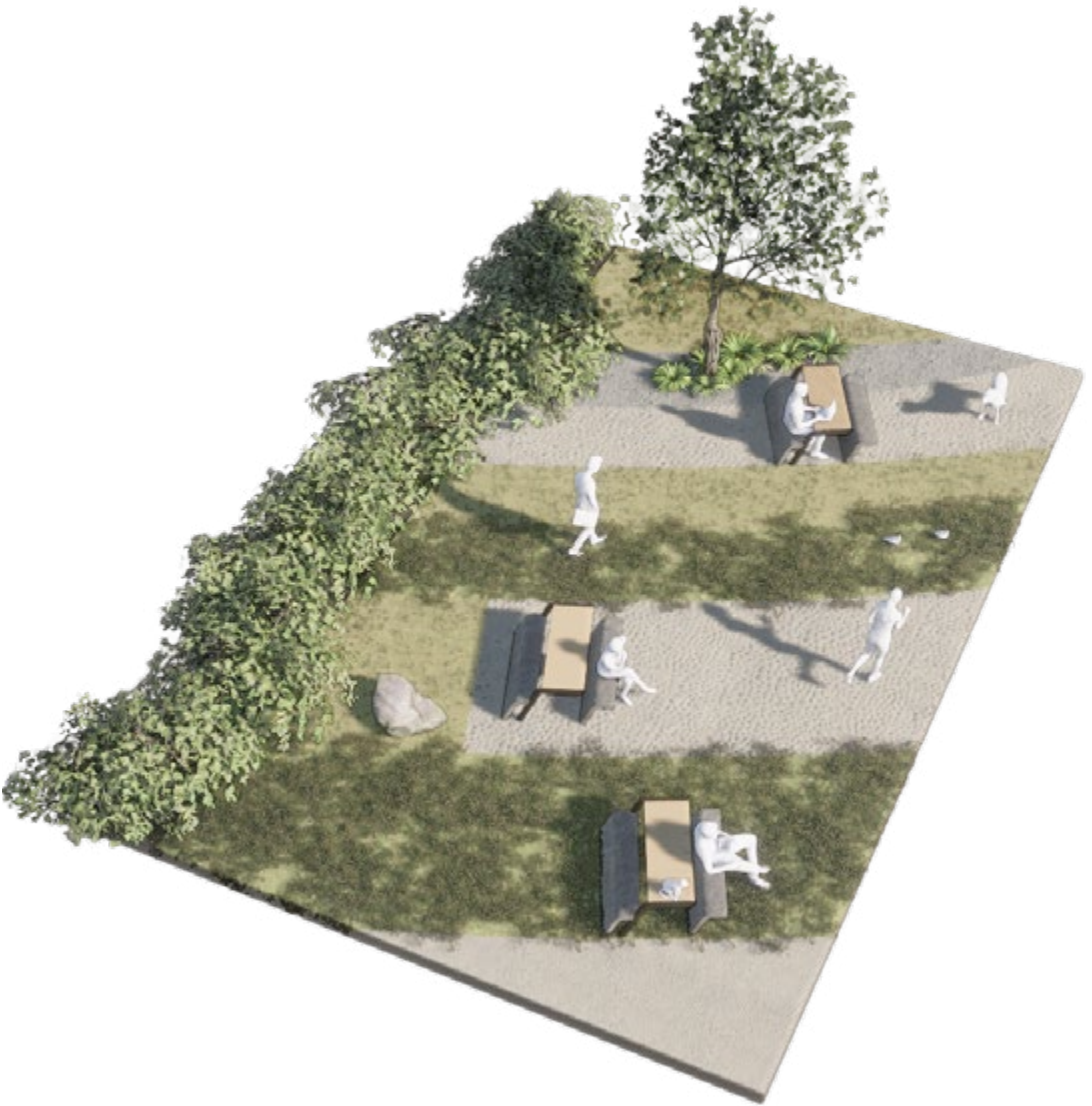
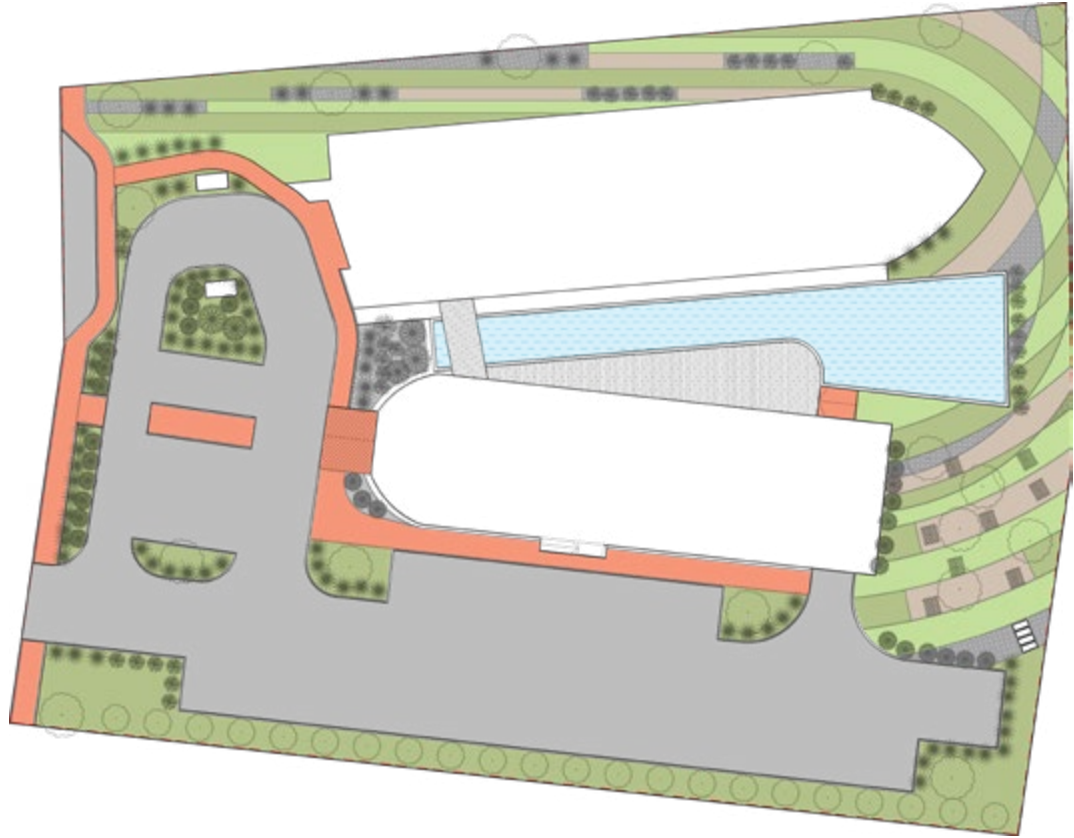
## Event Hall - GF

When visitors prefer to be dry during seasonal water events.

## Test Pool - GF

Boat testing & practicing activities before going into real nature.

# Landscape Proposal



## Mast Tree

Screening away from empty plot of land at south.



## Tamarind Tree

Shading tree for users around the picnic area



## Jasmine Bush



## Snake Plant



## Spider Plant

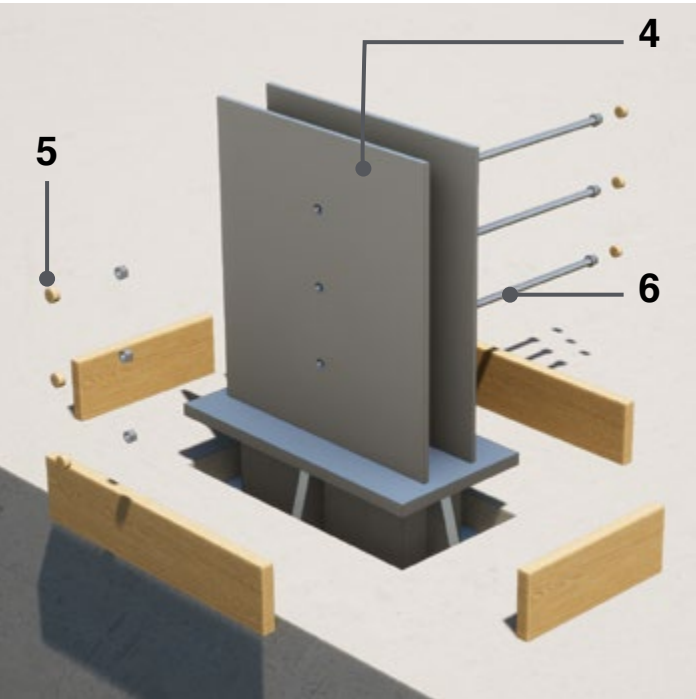
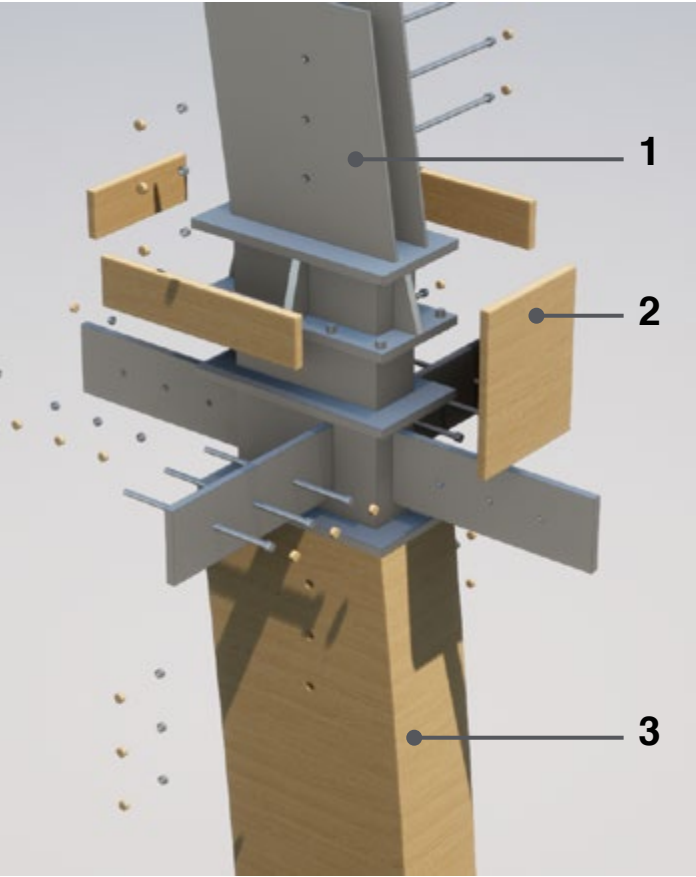
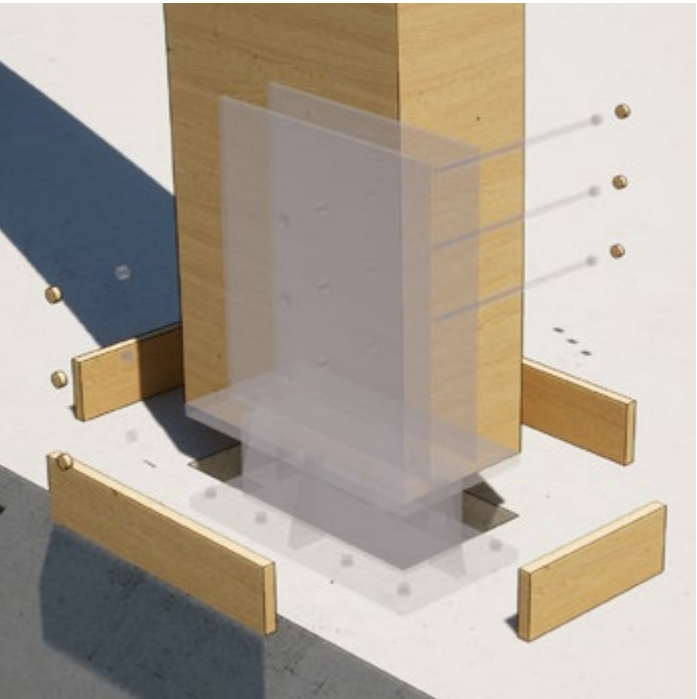
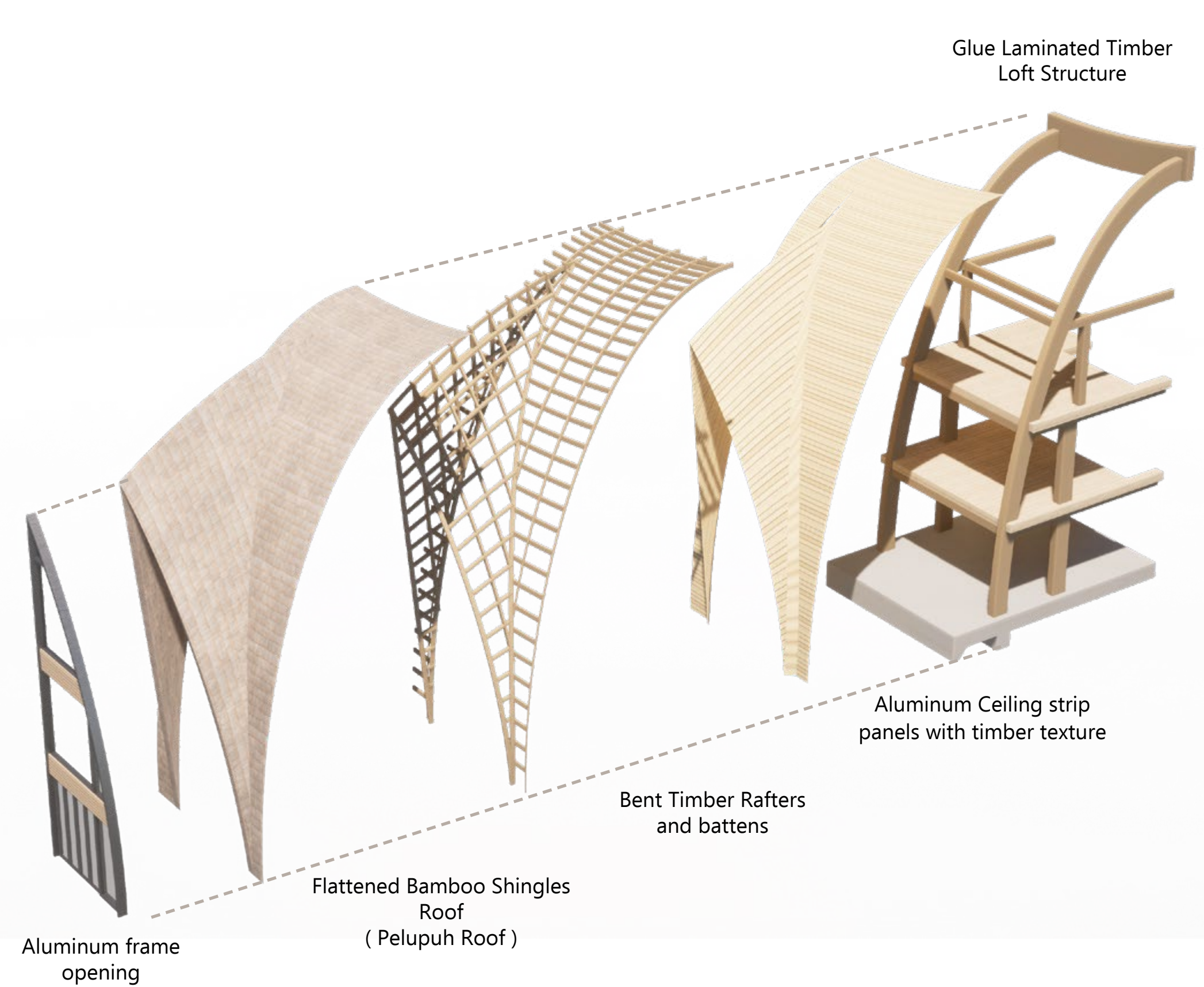
A series of decorative bushes for complimenting the landscape proposal

The Landscape design intention resonates with the design proposal, imitating the ripple of waves when a boat is cruising on water. In between the intersection will be a series of hardscape and landscape elements



Glued Laminated Wood (Glulam)

A structural material manufactured individual wood segments glued with industrial adhesives. This type of wood is highly durable and moisture resistant, capable of generating large pieces and unique shapes.

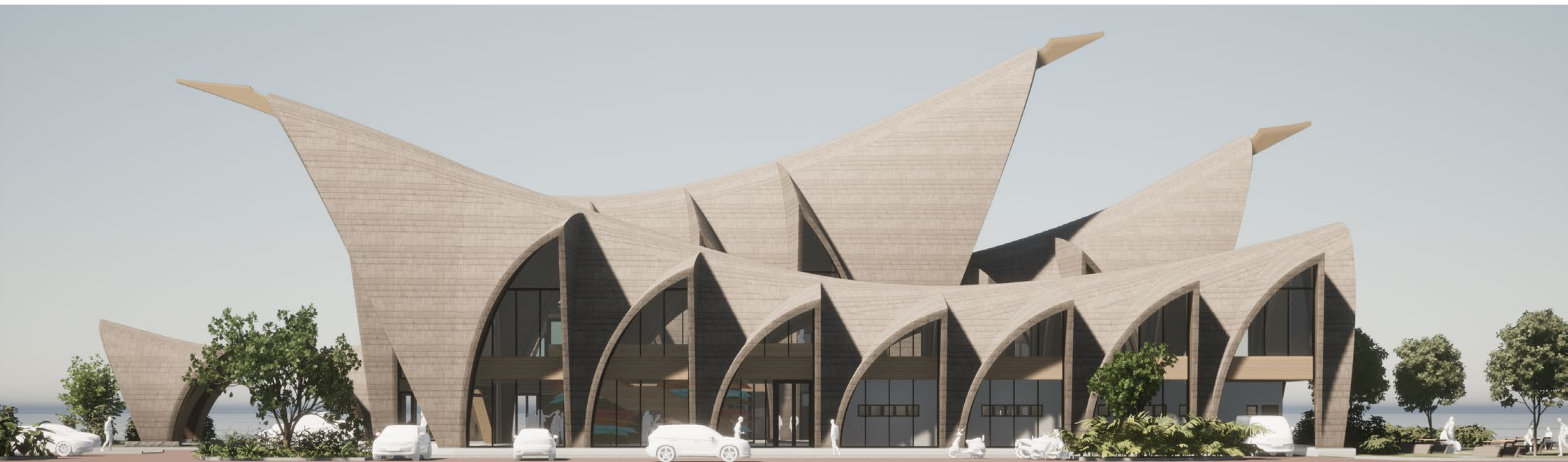


- Legend**
- 1. Steel joint connector for columns, beams and slabs
  - 2. Skirting
  - 3. Glue Laminated Timber Column
  - 4. Steel base plate with knife connecting blades
  - 5. Wooden caps to hide nuts and bolts
  - 6. Nuts and Bolts

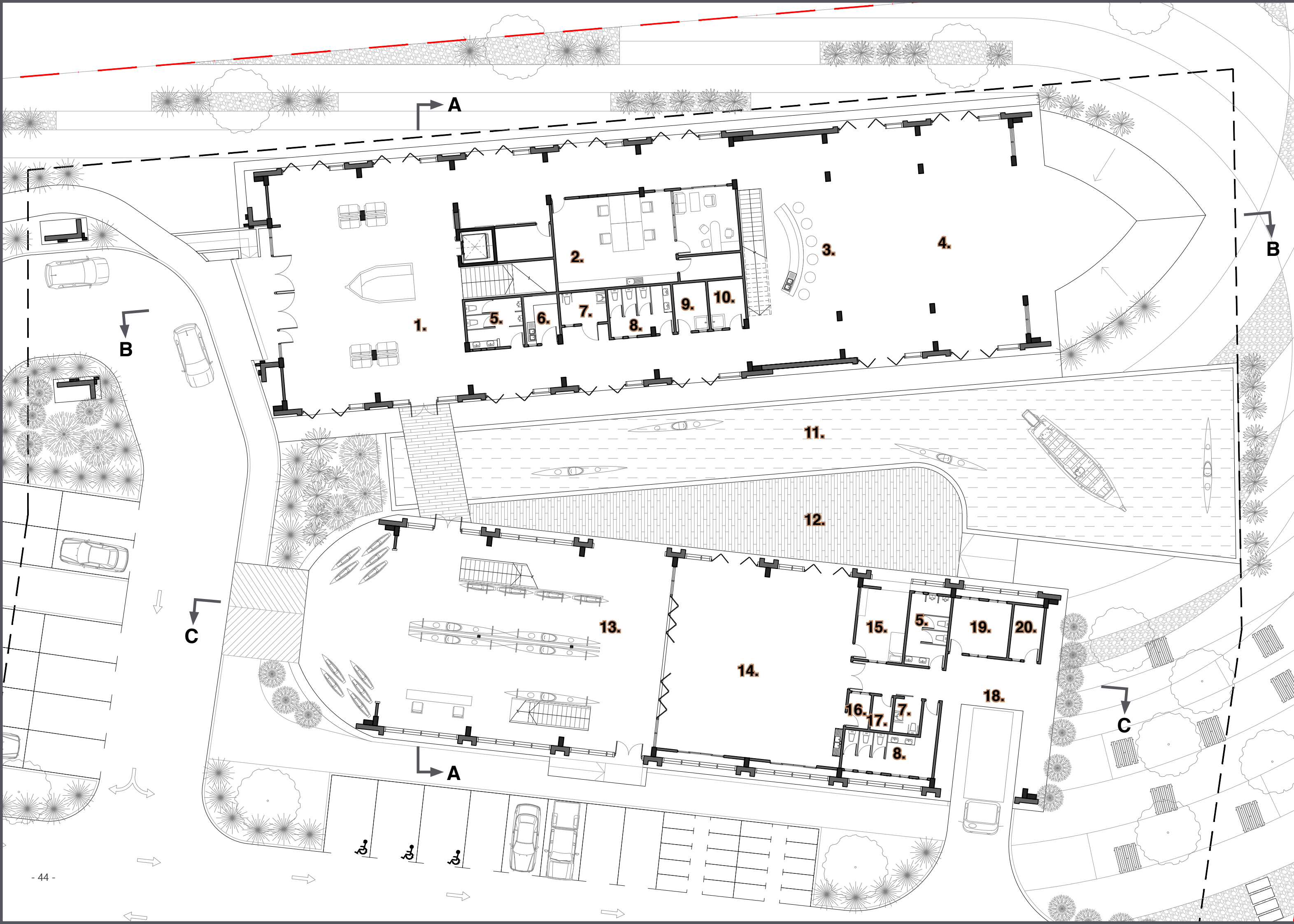
**The connections**

The overall column structure consists of steel connectors which creates a composite structure. The steel connectors are well hidden in between the Glue Laminated Timber layers to achieve the design intention. The remaining exposed parts are hidden behind timber skirtings.







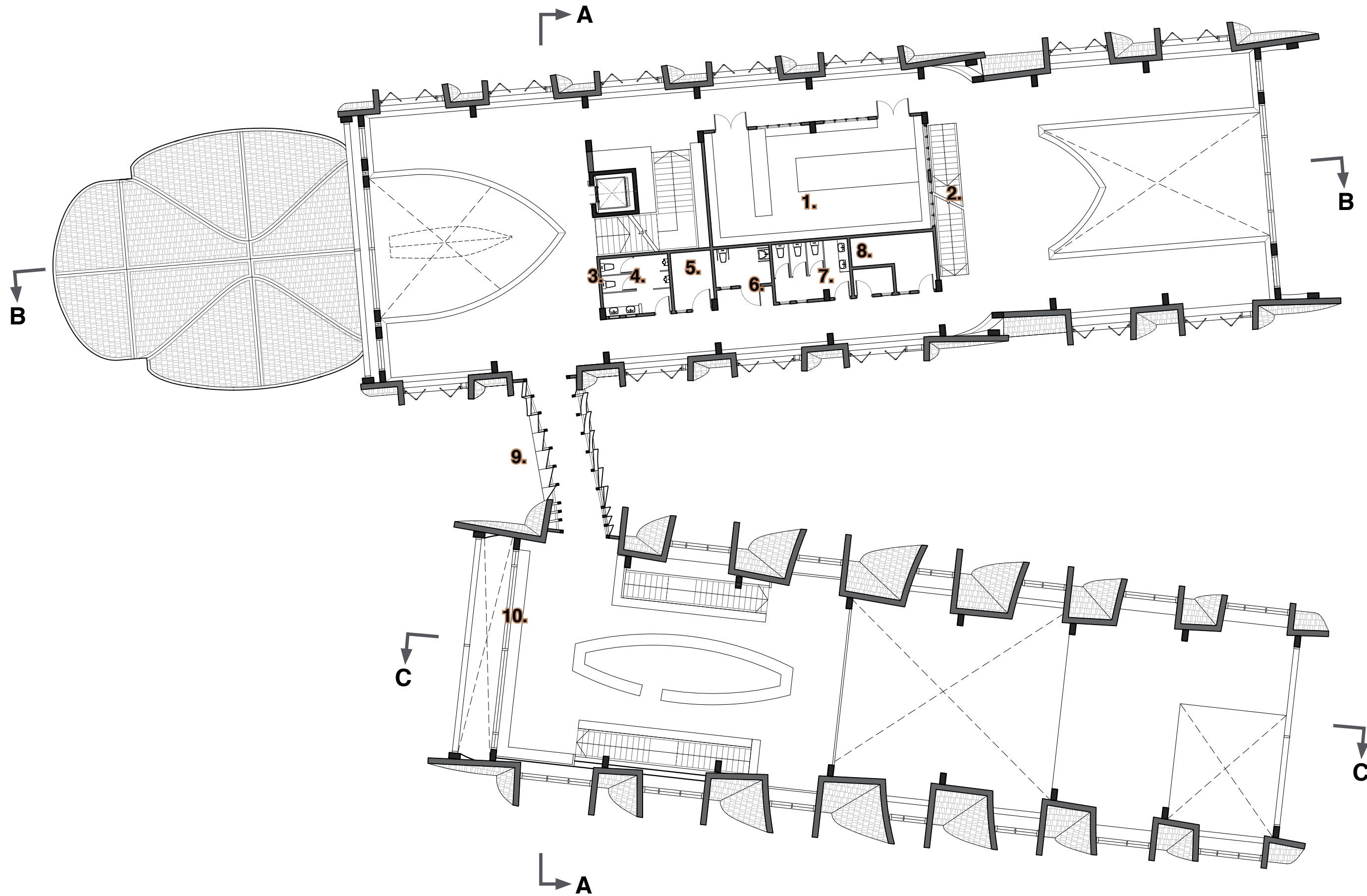


### Legend

1. Lobby
2. Staff Office
3. Drinking Bar
4. Event Space
5. Toilet M
6. Lactation
7. Toilet D
8. Toilet F
9. Surau M
10. Surau F
11. Test Pool
12. Outdoor Deck
13. Boat Rental
14. Workshop
15. First Aid
16. Tools Storage
17. Janitor
18. Loading Bay
19. Motor Pump Room
20. Disposal

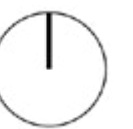






### Legend

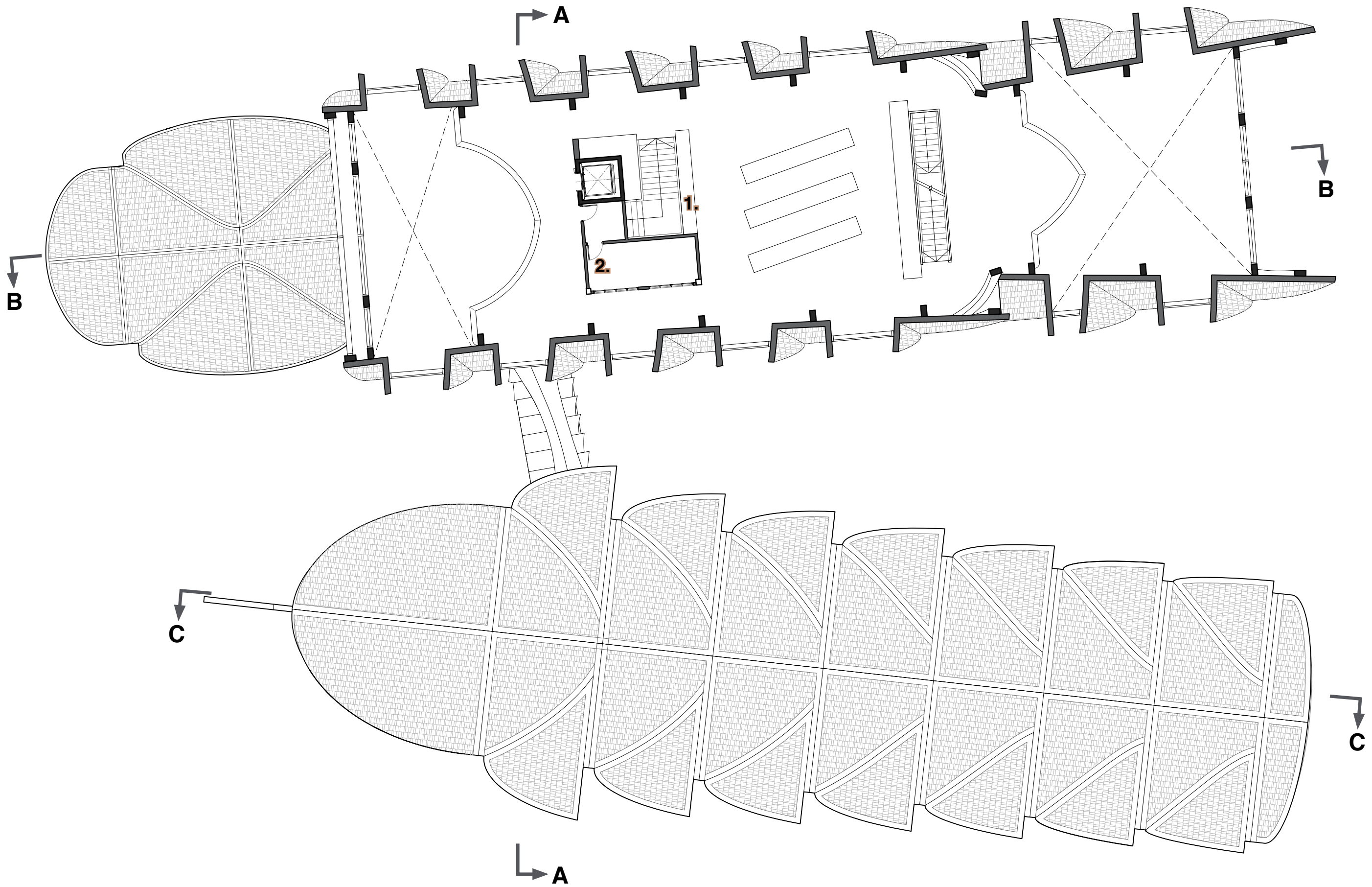
- 1. Temporary Exhibition Room
- 2. Exhibition Space
- 3. Toilet M
- 4. Lactation
- 5. Toilet D
- 6. Toilet F
- 7. Janitor
- 8. Storage
- 9. Bridge
- 10. Souvenir Shop



### First Floor Plan

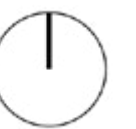






### Legend

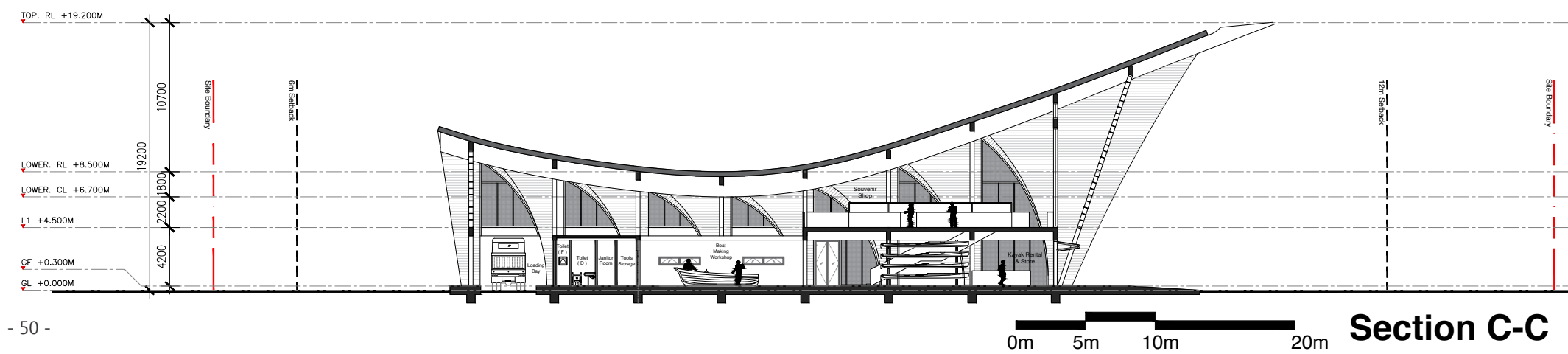
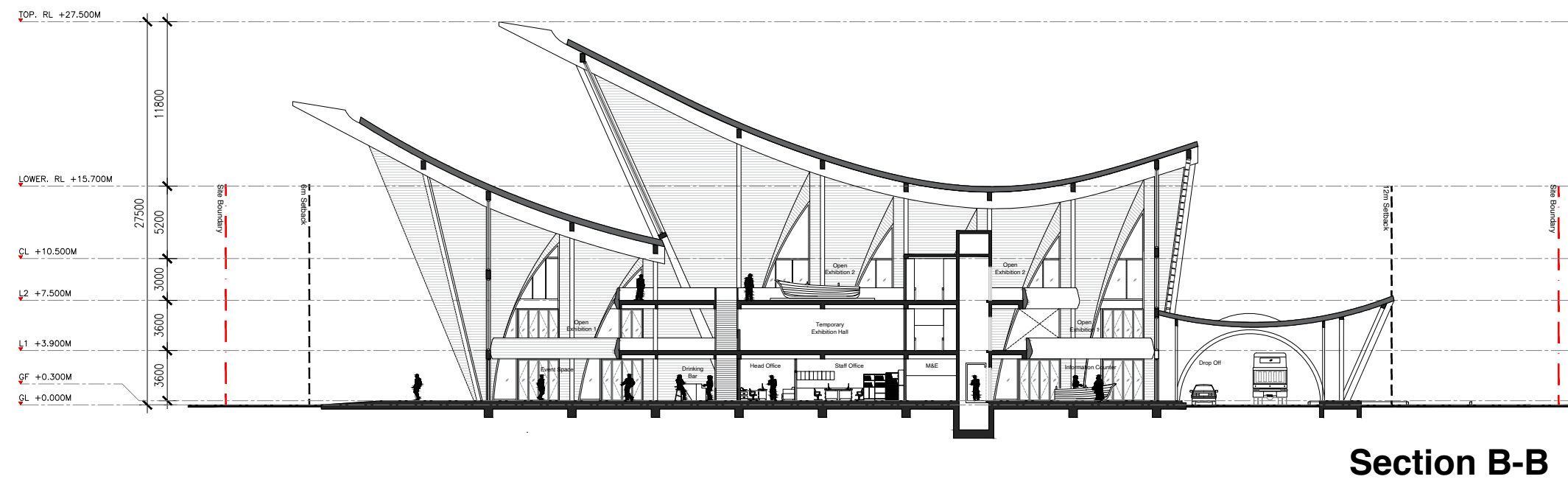
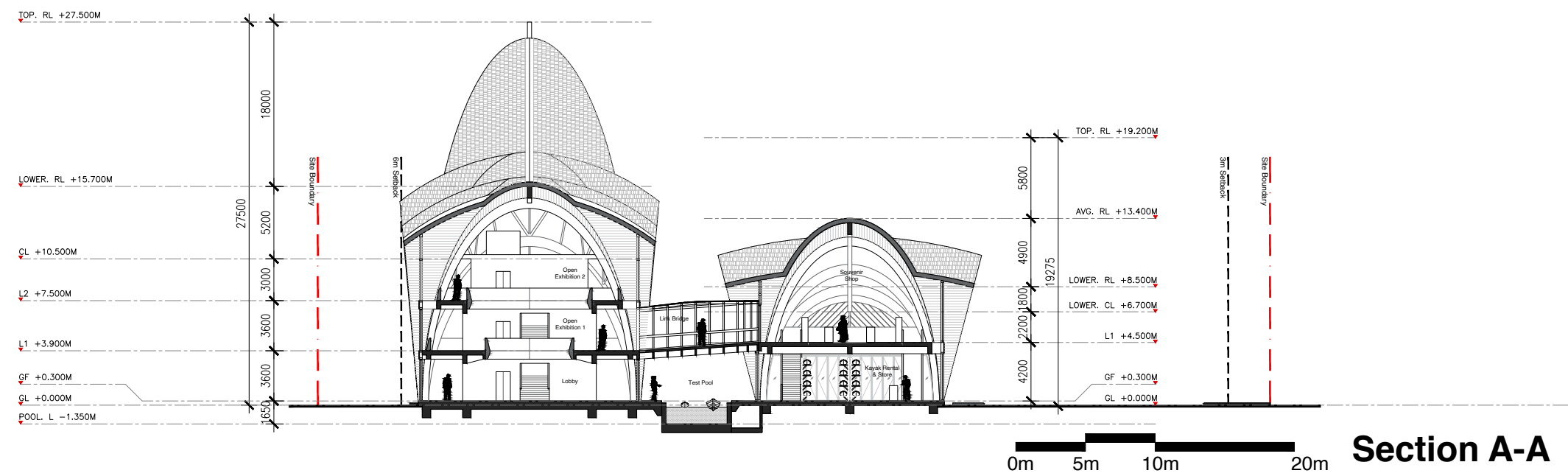
- 1. Main Exhibition Space
- 2. Water Tank Room



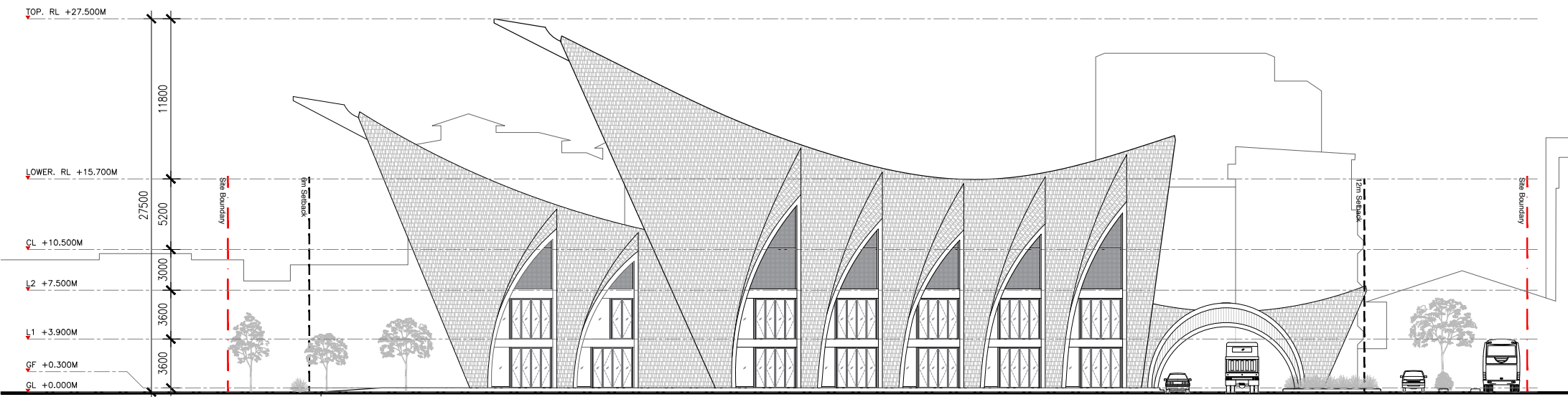
### Second Floor Plan



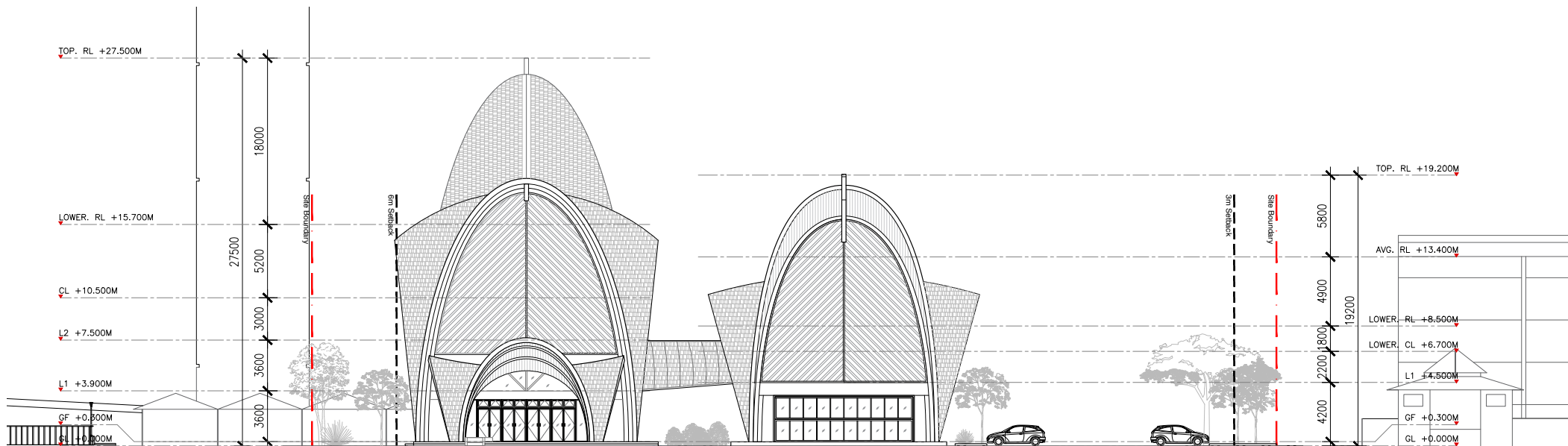




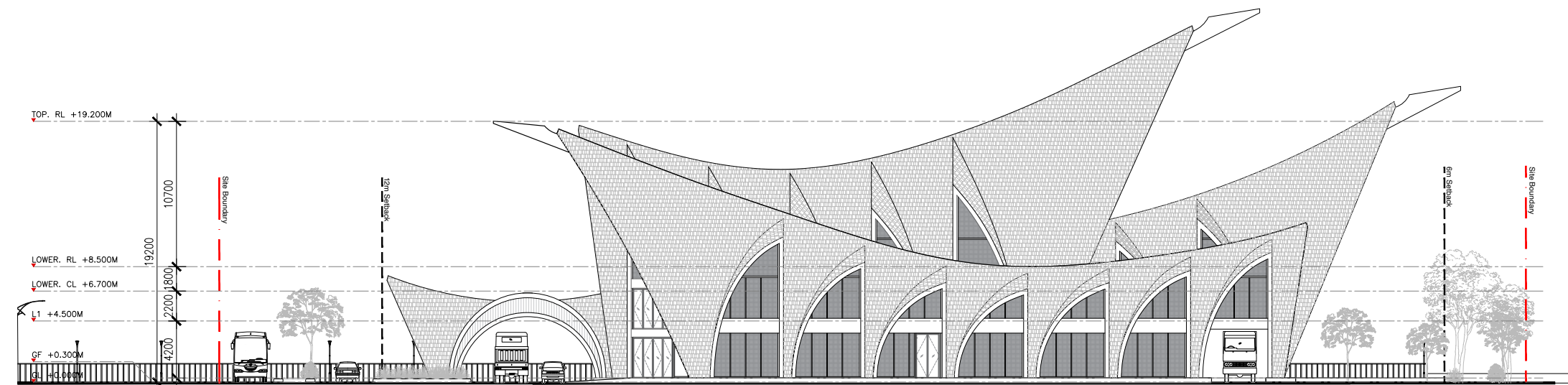




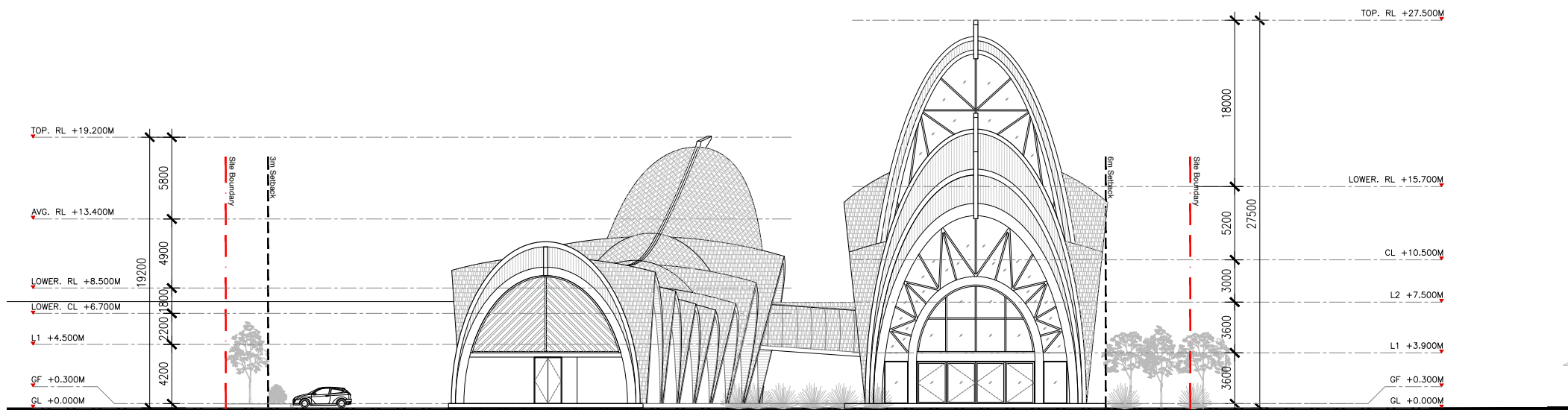
0m 5m 10m 20m **North Elevation**



0m 5m 10m 20m **West Elevation**



0m 5m 10m 20m **South Elevation**

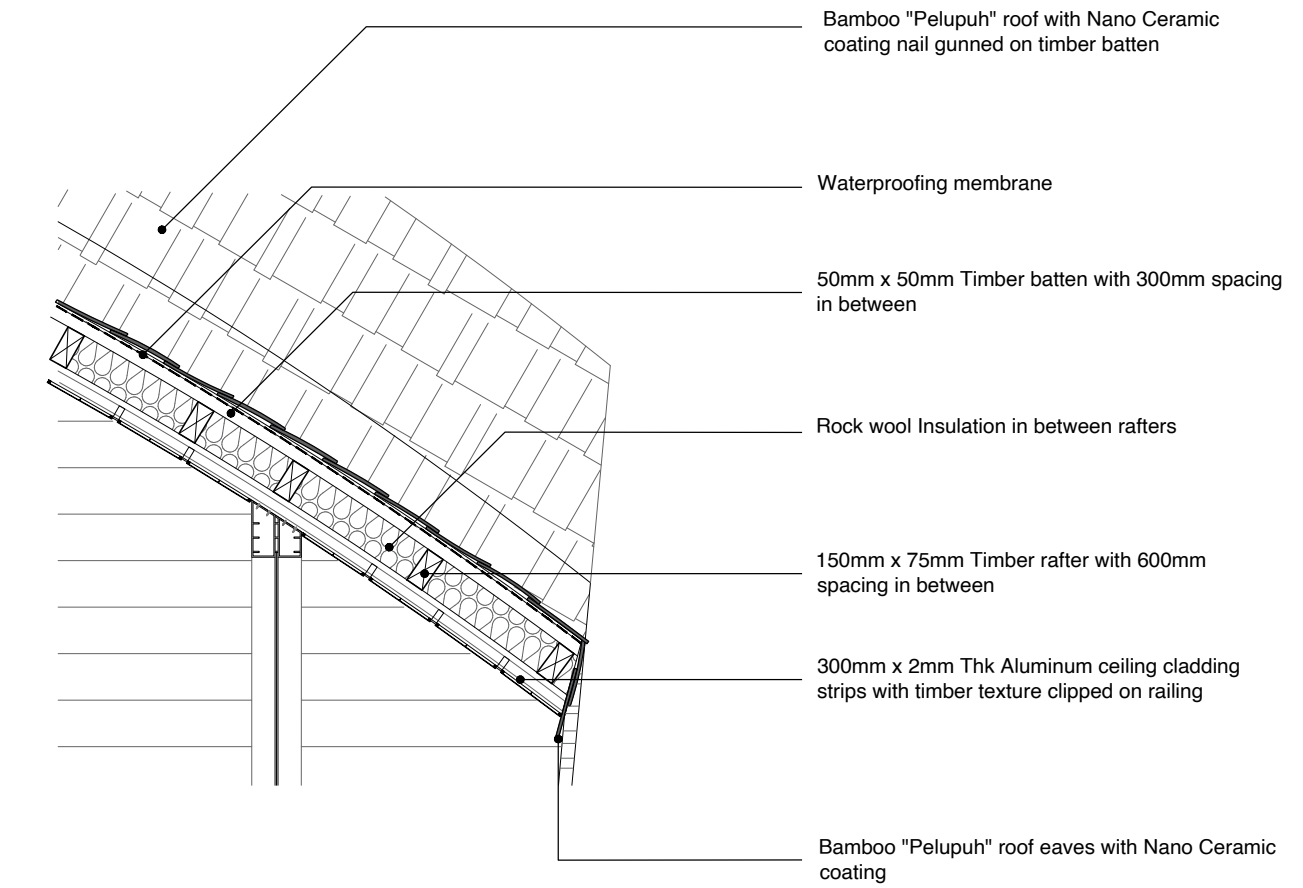
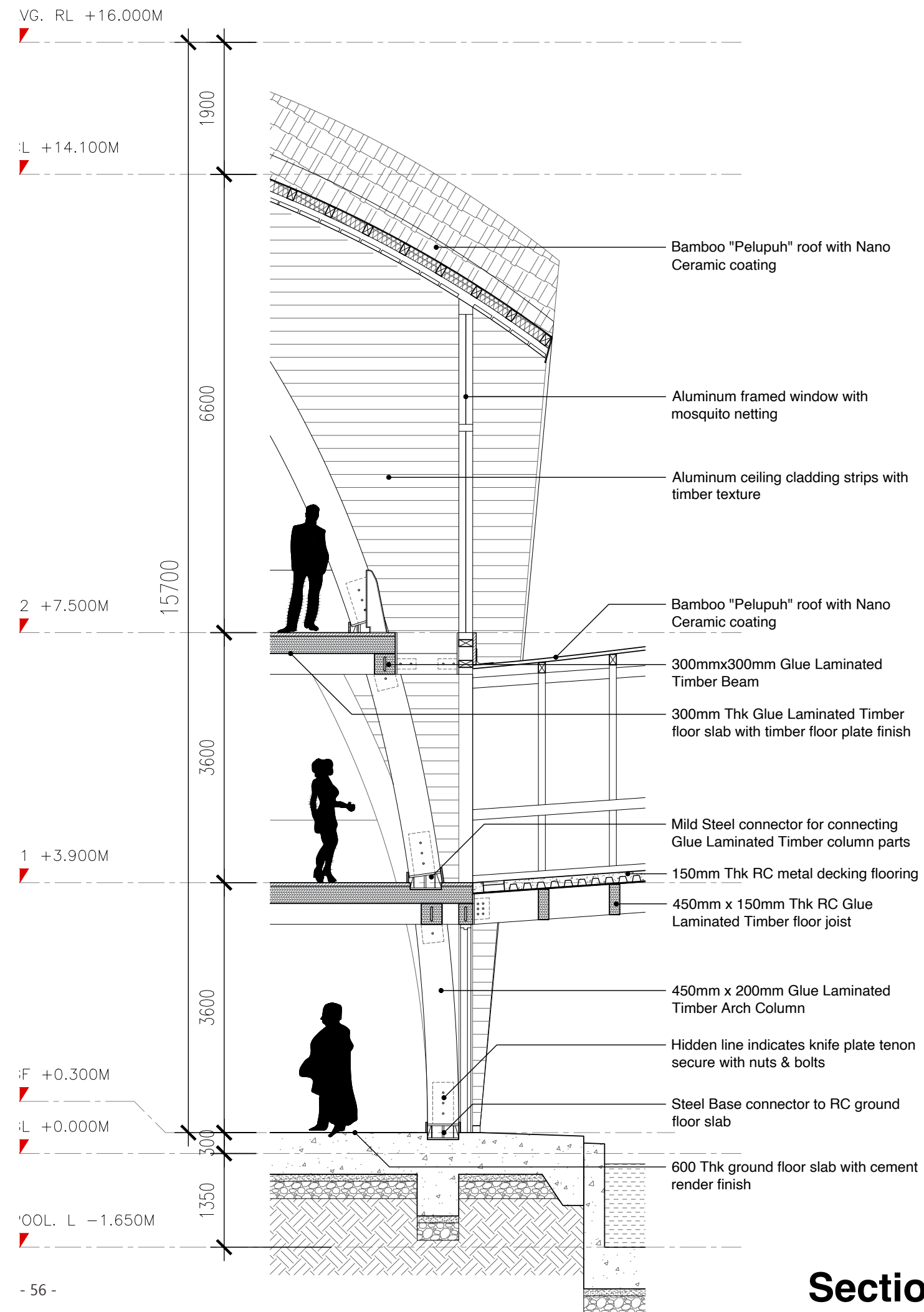


0m 5m 10m 20m **East Elevation**

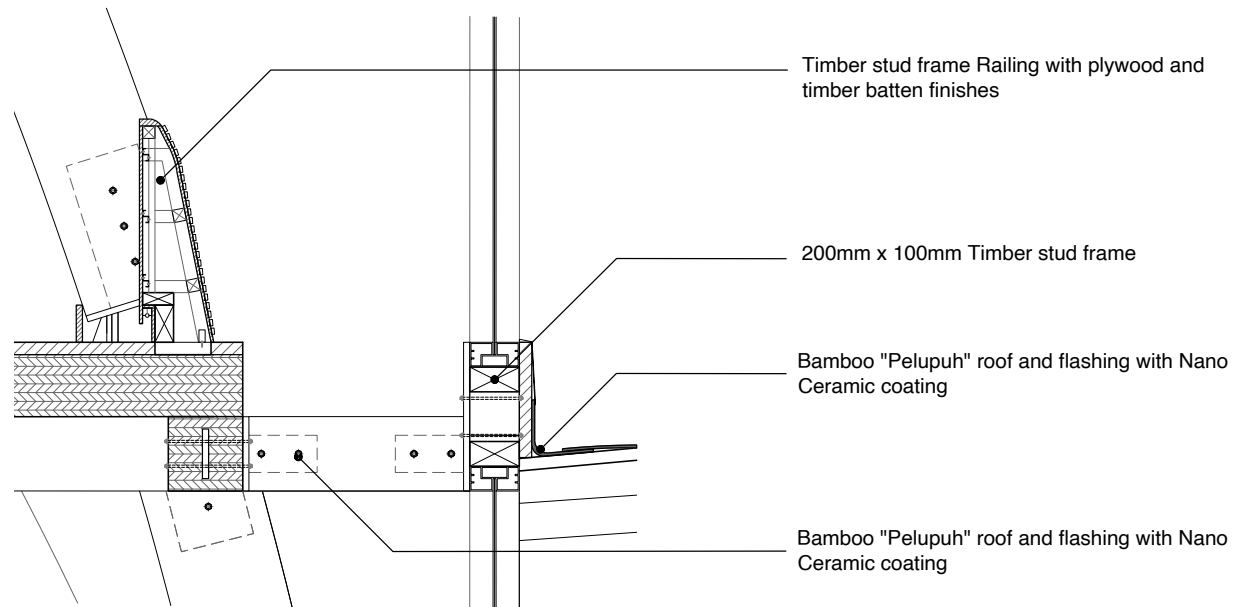




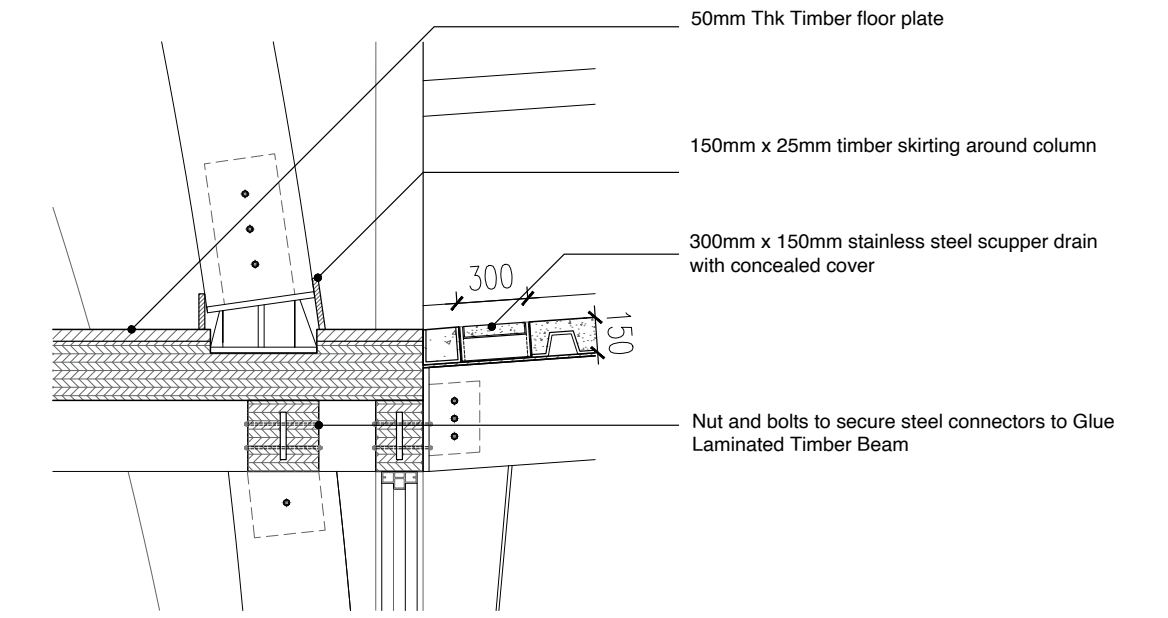




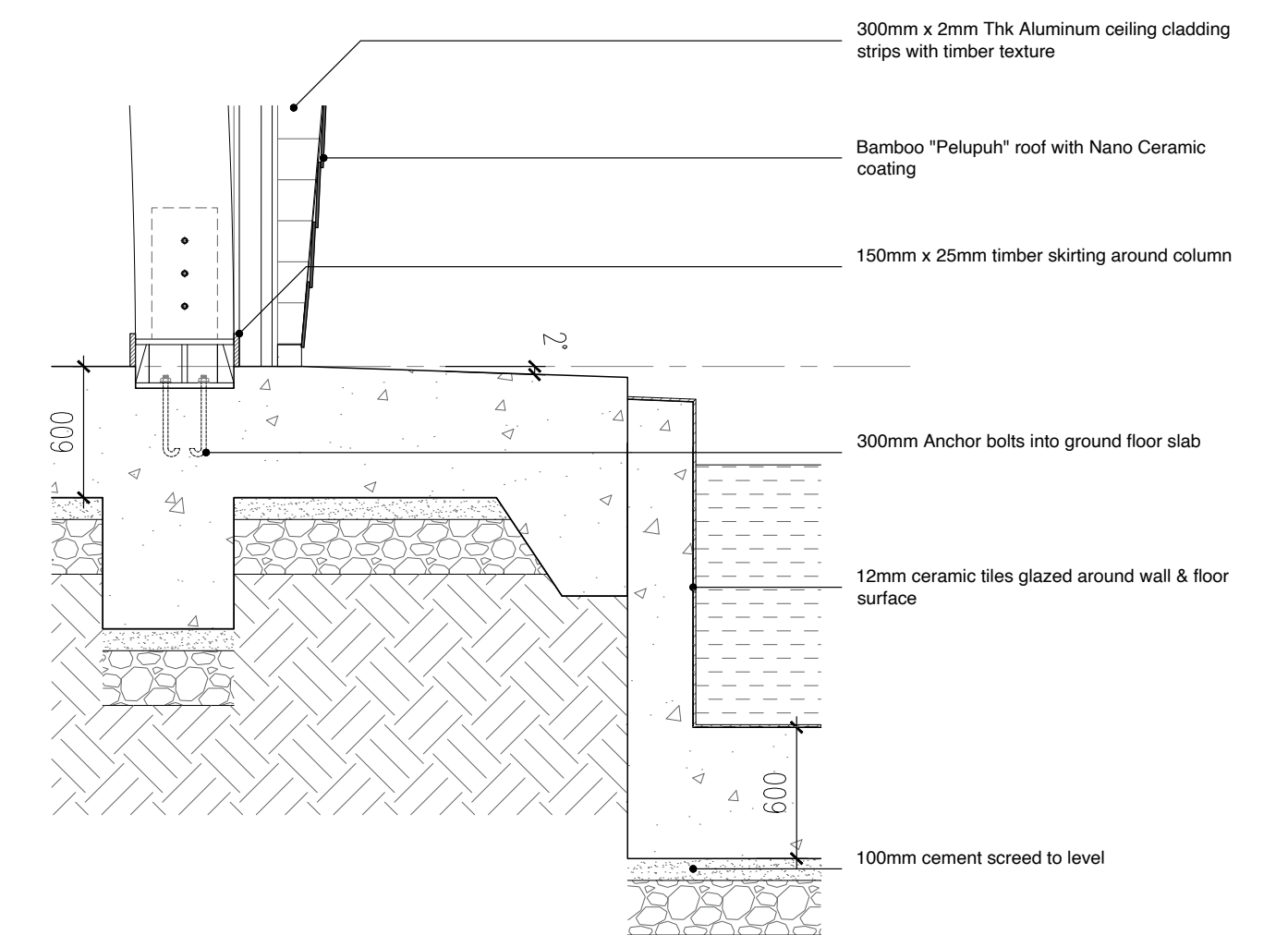
Detail A



Detail B



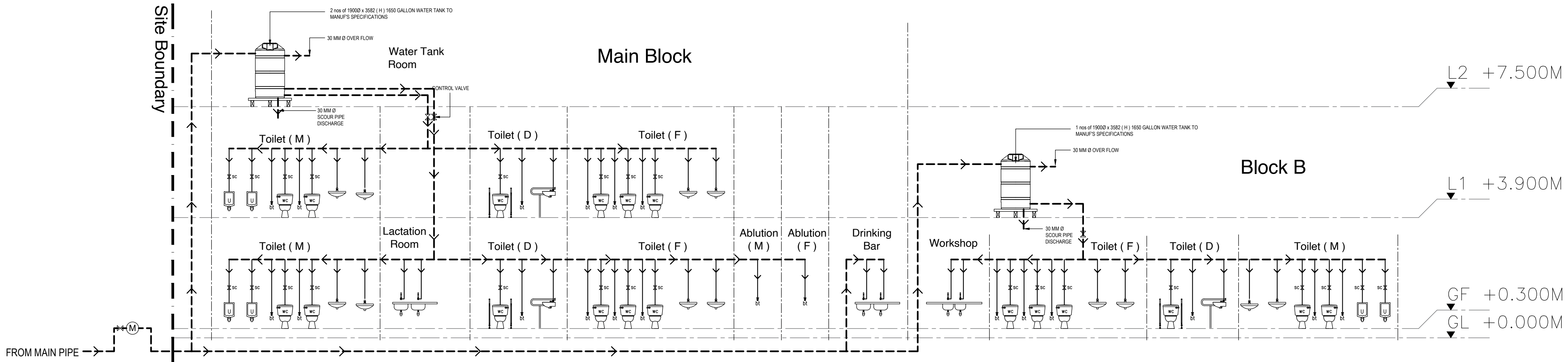
Detail C



Detail D

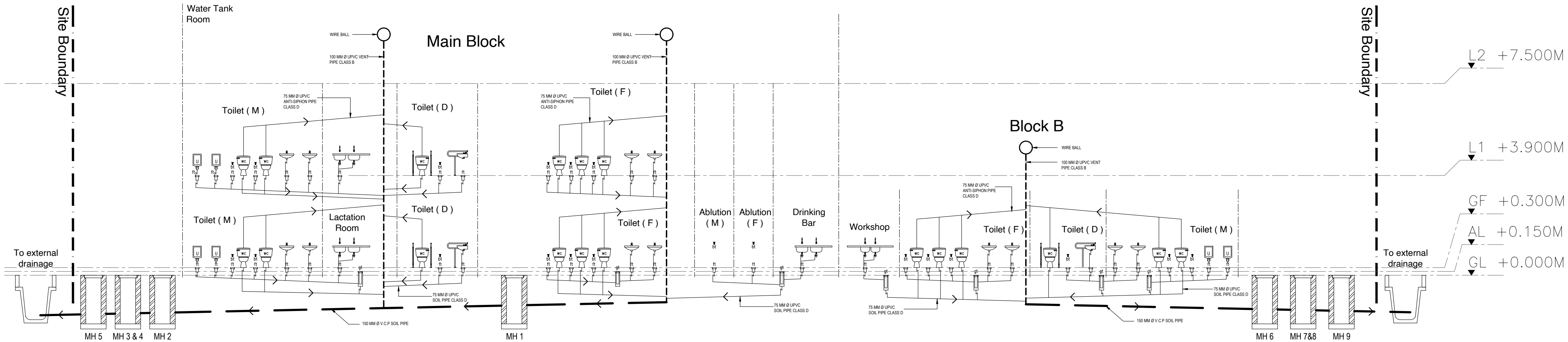
## Sectional Details





LEGEND					
	19 MM Ø CPVC PIPE		STOP CLOCK	WC	WATER CLOSET
	25 MM Ø CPVC C PIPE	bt	BIB TAP		
	WATER METER	b	WASH BASIN		



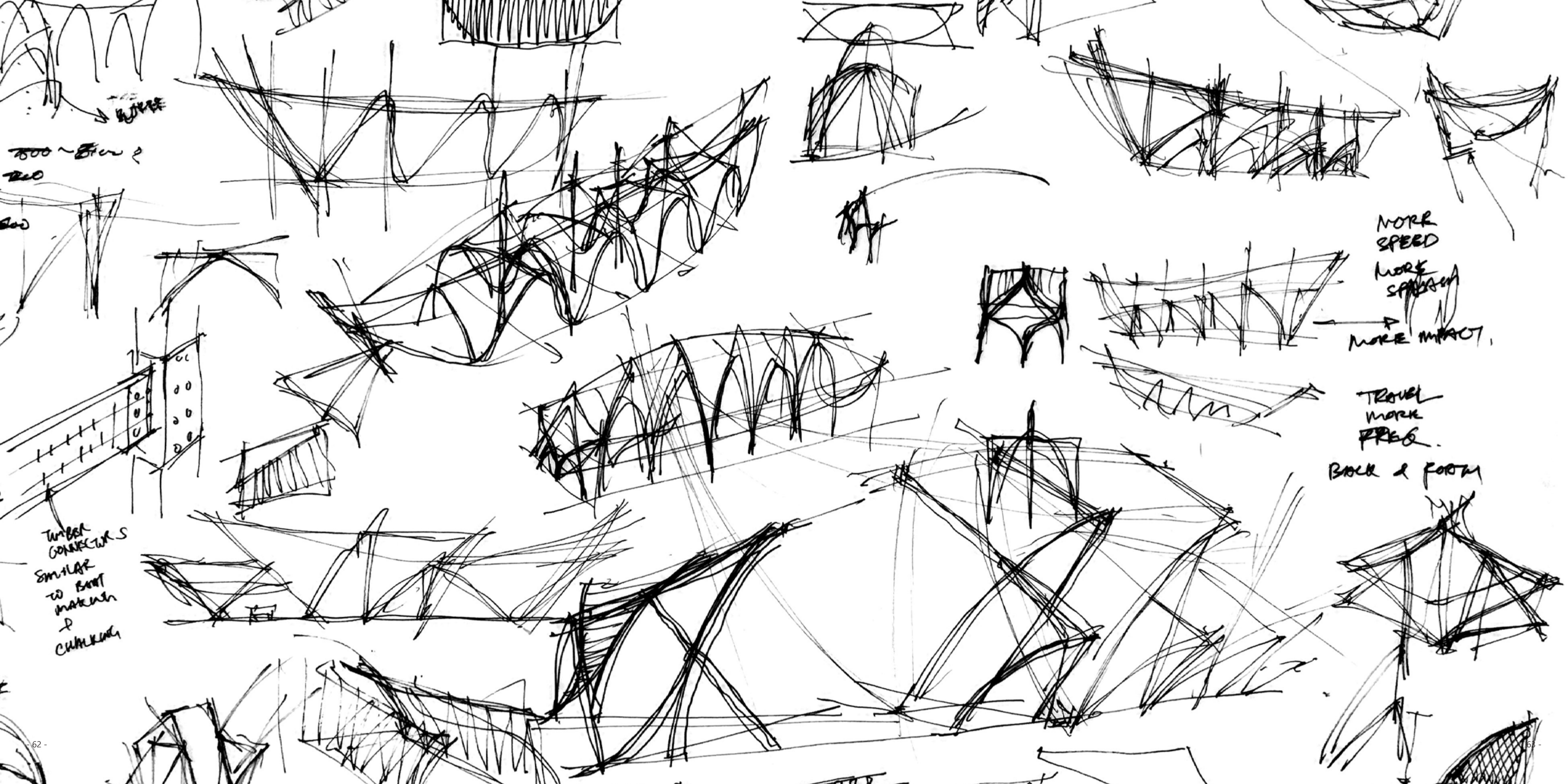


# LEGEND

---	75 mm Ø UPVC VENT PIPE CLASS B	ft	FLOOR TRAP	b	WASH BASIN
—	100 mm Ø UPVC SOIL PIPE	gt	GULLY TRAP	WC	WATER CLOSET
—	75 mm Ø UPVC SOIL PIPE CLASS D	MH	MAN HOLE		

**Scematic Sewerage Diagram**





800 ~ 850 p  
Red

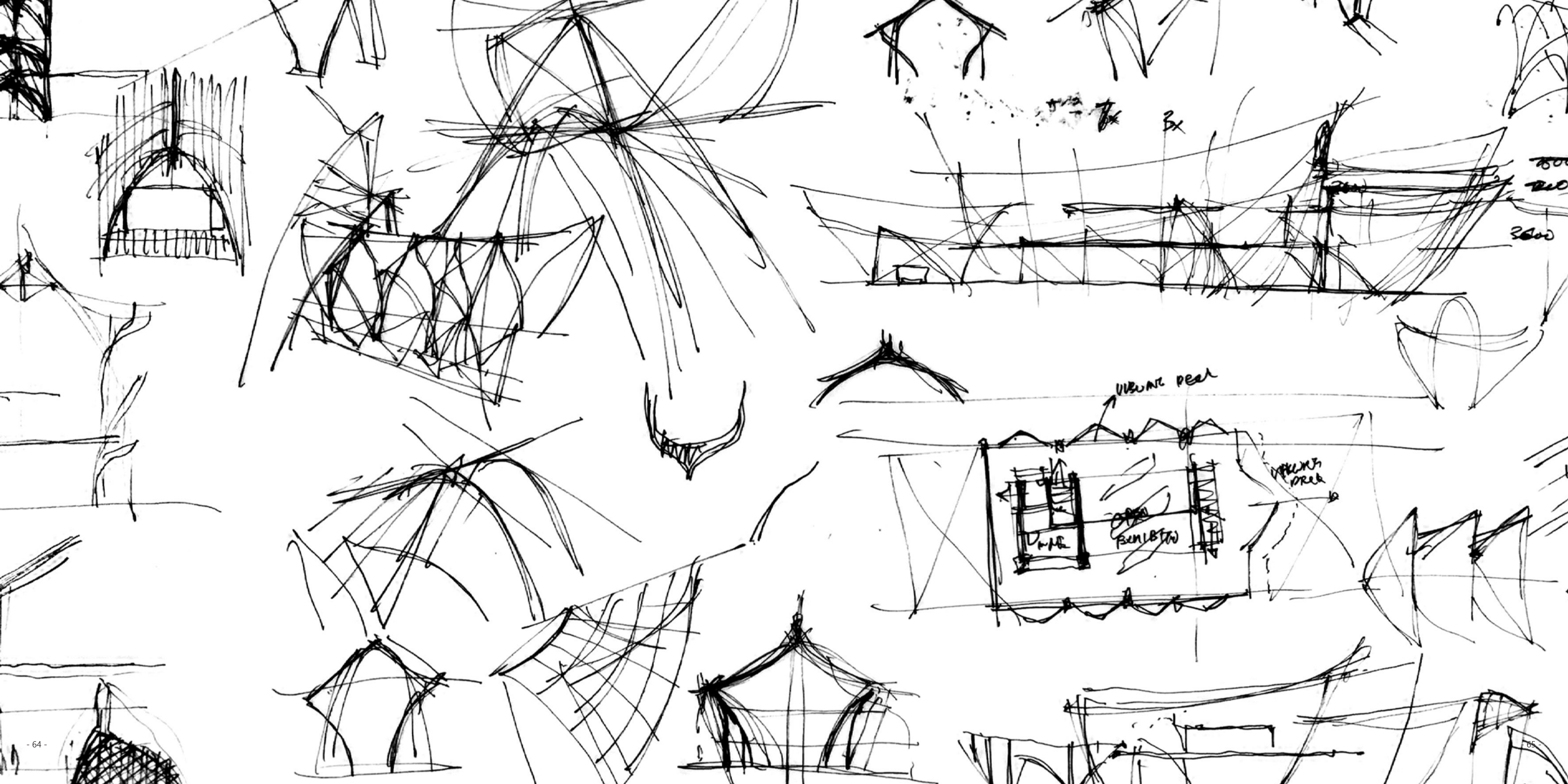
MORE  
SPEED  
MORE  
SPACE  
→ MORE IMPACT

TRAVEL  
WORK  
FREQ.

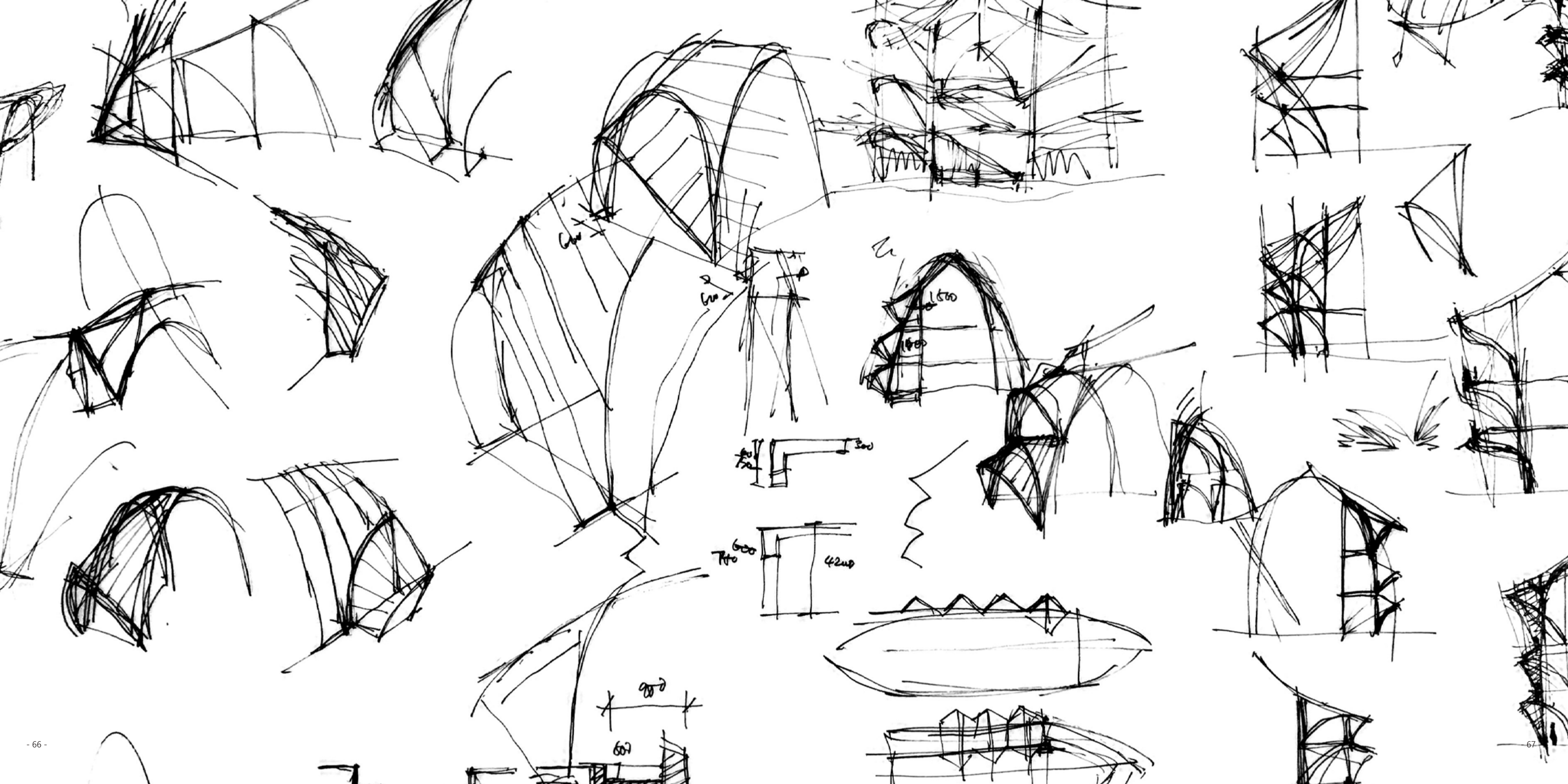
BACK & FORTH

Timber  
CONCRETE  
SMALLER  
TO BOOT  
MATCHES  
&  
CUTTING

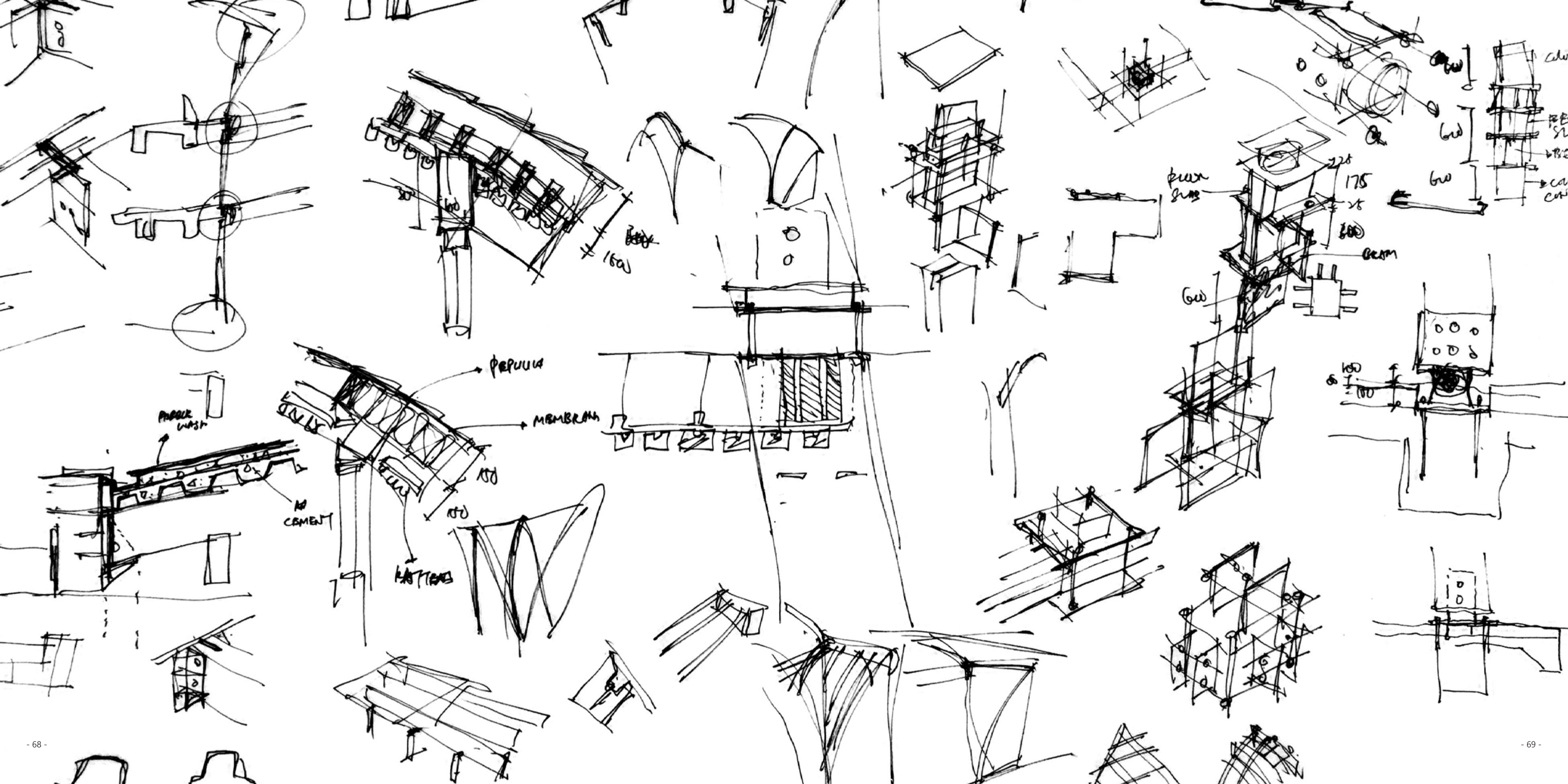














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